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NATIONAL TRANSPORTATION SAFETY BOARD

Investigation Report on:	
POSITIVE TRAIN CONTROL SPECIAL REPORT	Reference No.: DCA21SR003

Interview of: CALVIN VISER, Railroad Safety Specialist
Federal Railroad Administration

Via Microsoft Teams

Thursday,
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APPEARANCES:

JOHN MANUTES, Rail Investigator
National Transportation Safety Board

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National Transportation Safety Board

I N D E X

I N T E R V I E W

MR. MANUTES: So this is just the preliminary stuff. Good morning. My name is John Manutes. I'm an NTSB rail investigator. Today is September 23rd, 2021. We are meeting virtually via Microsoft Teams to talk with Calvin Viser who is employed by the Federal Railroad Administration.

This is in conjunction with NTSB special investigation report regarding the future of PTC systems. The reference number is DCA21SR003. The interview is being recorded. We'll transcribe the interview and provide a copy of your review, Calvin. The transcription will be placed into the docket for this special report.

So it's a small room. So before we start, we'll go around the room and introduce ourselves. We'll do this quickly. I'll start off then maybe Ruben, then maybe Calvin. We're going to want to spell our names, say who we work for, and our titles. So my name is John Manutes. The spelling of my name is J-o-h-n M-a-n-u-t-e-s. I'm an NTSB rail investigator for this report. Go ahead, Ruben.

MR. PAYAN: My name is Ruben Payan, R-u-b-e-n. Last name P-a-y-a-n. I'm an electrical engineer with the NTSB.

MR. MANUTES: Okay, Calvin?

MR. VISER: Calvin Viser, C-a-l-v-i-n V-i-s-e-r. I'm a specialist -- safety -- railroad safety specialist, senior test monitor, western division of PTC, for the Federal Railroad

Administration.

MR. MANUTES: Thank you. So Calvin, thanks a lot for meeting with us today. I had to get that first part out of the way. I'd like to just pass this over to Ruben. He's our technical expert with PTC. I'll -- you know, if I miss something or have a follow-up question, I'll jump in. But I want to keep this fairly informal and just have a conversation. Does that sound good, Ruben?

MR. PAYAN: Sounds good.

MR. MANUTES: Good, Calvin? All right.

MR. VISER: Yeah, I'm good.

MR. MANUTES: Thank you. Thanks for bearing with me while I read all that.

INTERVIEW OF CALVIN VISER

BY MR. PAYAN:

Q. Thanks for talking to us, Calvin. As you know, the mandate to implement a PTC came last December after several delays. But it's in place now. So we've seen some NPRMs regarding PTC since then. Can you kind of walk us through what the NPRMs kind of covered or any --

A. Well, there was a couple. One of the proposed rule changes was the submissions of requests for amendments to the safety documents, the supporting documents of the systems that we have to give certification to. And basically, what the industry wanted to do was, for example, all the class Is with a number of other

railroads got together and decided to go with one particular system. That was the IETMS system itself. So of those 19 railroads, when there's a functionality change or something that will require them to update their safety plan, it was -- an NPRM was put in where they could do this jointly, number one. Instead of us getting 19 plans to review, we could review the one plan and then give them the -- give the industry or give that group itself the okay to make the proper changes to support the operations. So that was one of the things.

And they requested a timeline. Well, they wanted 30 days. We said that was unacceptable. We what we told them was based on, you know, our criteria of reviewing those documents and ensuring that we could validate the numbers in the, you know, human factor analysis of it. Many times, the hazard is the best (indiscernible) we say we do it in 45 days.

So that was one of the things that they requested was could they do it jointly, number one. We agreed to that. Yes. Number two, well, we try to do it in a timely fashion so if it was a critical situation, we wouldn't be delaying them from implementing something that would be of importance to their operation. So that was one of the things. I'm trying to think of the next one.

Q. I remember reading something about the safety notice about being able to defeat the PTC enforcements.

A. Oh, well, that was a safety advisory. That wasn't an NPRM.

Q. Oh, okay.

A. That was a safety advisory. And what happened there was one of our guys was out testing -- and it was actually with the access system. Was out testing and somehow -- I don't know how the conversation was initiated. But it was basically, could you circumvent the system to override a penalty application. And with that particular system on that particular unit -- and it was an older-style locomotive -- they were able to do that.

So we put out a safety advisory to the industry to check all your unites to validate if the cutting out of the brake stand would -- if it would actually transition to a penalty application resulting in a stop immediately, or would they be able to operate continuously and override that penalty. We're still collecting that data. But I believe all the railroads have responded. I have not personally reviewed it but we have responded to it. Those that had identified it also provided us the mitigations that would be in place to support that.

I will say that there was only -- I don't think there was many that required reconfiguring. I think it was more of there's going to be some training issues addressed. And they were going to tighten up their mitigations. Because with IETMS, for example, that's the system that I'm pretty much dominant with. There is a notification provided. There is a stop required in the event that he can't cut it out and cut it back in. And if he was to cut it out, like I said, there's notifications sent to the supervisor, to the dispatcher. And for him to actually cut the system back in,

he has to come to a stop. So that's that particular system. And not all of them did that. Like I say, access didn't do that. So that's why the advisory was put out there. So they're modifying their system to support that.

Q. You say it had to be reconfigured. Is this a software reconfiguration or a mechanical?

A. No. This is -- well, not really a software. It's a hard-wired configuration of him being able to walk over, flip a breaker, cut out the brakes, and then flip that breaker and cut it back on, or switch. That's what the guy had been doing. And he was actually bragging to the wrong person when he brought the conversation up. We're like, what, you can do what. And we had a couple inspectors go out there. A couple specialists go out there and validate that they could do this which is why that safety advisory was issued.

But that the intent of him -- we're not saying they can't cut it out. But the intent of him cutting it out without authority, that's the problem. You know, you're going to have situations where there's going to be something either communication, satellite, or GPS, or whatever, that's going to require you to have to cut out. But you have procedures to cover that.

And what he was doing -- this particular guy was doing during that particular time was he was circumventing the entire process. He was just bragging -- I can cut out and avoid getting a penalty here. And it was like, sorry, that's the wrong person you should

be talking to. And it impact all the railroads basically. We had to get a response from every railroad that is PTC -- had PTC installed on it. So we're still -- they're still trickling in. Of the 41 -- of the hosts, we've got all theirs. We're still getting some of the things from, you know, the small entities that were equipped to operate on some of the class ones. But class ones are being big brothers to them and ensuring that they can support the operation.

Q. That's good. That's good. That was a good find.

A. Yeah, it was. It was.

MR. MANUTES: Yeah. It's funny how people will brag to the wrong person sometimes. I mean --

MR. VISER: Yeah, and you know --

MR. MANUTES: Like my kid tattling on himself.

MR. VISER: -- not paying attention to what you're saying. You know, we're federal regulators so we're not your friends. And I always tell them, I say, whatever we talk about, you know, you better consider that as a business. I'm not talking to you as a friend. That's how that came about. Other than -- I don't think there was anything against the rules itself for any leniency. It was -- like I said, it was more of a paper tracking purposes. But operational-wise, we didn't -- I don't think we give out leniency warrants or provisions to the (indiscernible) for that.

BY MR. PAYAN:

Q. So at this last accident I went to, we were getting a lot of

mixed messages about en-route failures for PTC. We were being told that FRA had issued or was going to issue an NPRM on en-route failures.

A. Well, it's not an NPRM. What happened was due to the FAST Act, Congress granted a braking period pretty much is what it is. An en-route failure is 236.1029. All the railroads have identified their operations of what it would be in the event of a failure while operating.

There's speed reductions associated with that based on type of train, either passenger or freight, method of operations within that segment, type of material being transported, things of that nature.

But Congress said, give them a year. Actually, it was two years if you remember how the FAST Act was written from -- the original was from 2014. So from 2014, you get 24 months. Well, in 2015, they rewrote it. Timeline was 2020. Give them a year to break it in. Year -- another year of other -- unlimited or limited restrictions and then 2023 is fully 1029 operations.

So for this calendar year, we asked them to show us or tell us what your parameters will be. We can't force you to do it. We recommend you do it, but we can't force you to operate per your restrictions. If you choose to do so, so be it. If not, then that's what Congress said. We'll just have to note it an annotate what we're doing.

Come next calendar year, or January 1st of 2022, the speed

restrictions fall into place. So now, any en-route failure that a class I has on a freight train, maximum authorized speed in TCS territory will be 49 miles an hour. If it's of a lesser operating capacity on that particular track segment, then that's what they will fall to. But that's the mas. Max passenger speed would be 59 in TCS territory.

So that's where we're going to start imposing the restrictions. And we will be enforcing that for en-route failures. You still -- 1029 still covers initialization and initial terminal failures. And the only leniency we're giving them next year regarding initial terminal failures is if -- in the commuting industry.

For example, John knows what RTD you've got, WMATA which is more or less transit. (Indiscernible) railroad Amtrak's operations as far as the passenger train. What that will give them is the flexibility of, if they configure the train in the yard, and passes the departure test and then they can initialize it and take it out to the station and get ready for the first run, that's fine. That train can do what it's got to do.

But when it gets to the other end to come back -- let's say it fails. Well, they don't have a locomotive down there to bring it back. They can then bring that back per 1029. Which was, you can operate en-route failure mode but you'll be limited to these speed restrictions. So you won't be running access at -- well, 160-mile segments where they've got the leniency for that. They

won't be running that speed. They'll be running at whatever configuration we come to to support their operations. Well, right now, it's 59 miles an hour.

Now, I'm gathering Amtrak might petition us to change that. But if access fails when they go out on a return route, they -- max run that train, it will be 59 miles an hour coming back, you know. And that's -- those enforcements go into play January 1st of 2022.

January 1st of 2023, they can't leave the terminal with a bad train. They now have to have a piece of equipment to have in place to replace it or run a locomotive down there to get that equipment out of there. They cannot leave the terminal or leave -- if they can't initialize and operate in 2023, January 1st, 2023, it will not operate.

Q. How about for freight trains?

A. Same thing.

Q. So any crew change point? Is that considered a terminal?

A. Well, what we identified there is initial terminal locations. They've identified those. And some of them are crew points. But wherever -- the initial terminal is where they built it. But at crew change points is -- if a departure test is required, and that test fails, they'll have to get -- in 2023, they'll have to get another locomotive out there to run that train. That's the only thing that happens in 2023 is you will not operate with a failed system.

Q. I see. Okay.
A. From initial terminal. If it's en-route, they can still go to the next maintenance facility. But they won't be able to leave that initial terminal with a failed unit.
Q. That makes -- yeah. They were totally wrong what they were telling us.
A. Yeah. Some of the interpretations there -- and they're taking it the way that -- you know the railroad is going to try to get as -- they want more flexibility if they can. Our job next year is -- and we've given them the blueprints of what the standards will be. Next year we've told our signal (indiscernible) guys, you get out there and ensuring that they're operating at the reduced speed. You know, we gave them a year to break it in. That's it.

Then the year after that, (indiscernible) you better be making sure they're not leaving initial terminal with a defective unit. They cannot operate like that after, you know, January 21st [sic] 2023. So there is -- there's break-in periods for them to learn and get it right.

Now, I will tell you, Metro in Chicago area supposed to go full operational. They're not doing the break-in period. Amtrak chose to go full capacity, too, with -- I'm not sure what they're doing on access. But with ITCS and IETMS, they chose not to do the break-in period. But I'm not sure if they're doing that with access. But they chose to put their restrictions or operate with

their restrictions already in place so there won't be no confusion starting next year.

Q. Okay. Oh, wow. That's interesting.

A. I think Metrolink is doing the same thing if I -- if my memory is correct.

MR. MANUTES: That's with the speed restrictions. Not with the -- you can't leave the terminal. That was --

MR. VISER: Right. With the speed restrictions. Right, right. The initial terminal thing --

MR. MANUTES: Next year --

MR. VISER: It's another year away. Yes, correct. That's correct.

MR. MANUTES: There's still just another year. Okay.

BY MR. PAYAN:

Q. So what is FRA participating in as far as new technologies? Are they doing anything for --

A. Well, we -- our research group is doing something. I am directly -- as far as the PTC branch goes, I'm directly involved with BNSF's onboard movement authority/virtual block system. I was part of the initial testing on the Plainview Sub last year. I actually wrote the approval letter to their waiver that's waiting to be approved.

We are directly, as far as FRA goes, involved with that process on a PTC level, signal level, OP level, and we actually got track involved just to ensure that the maintenance away

personnel -- the people that are out there on the track -- are going to be provided the proper training once these -- this functionality is put in place on the railroad.

So we've tried to touch all bases of what that -- what the onboard movement authority/virtual block lane. CSX has recently reached out to us for a zero-to-zero feature using trip optimizer which basically they're trying to automate train movement. You know, they'll be able to put this thing in notch eight and either go forward or reverse and let the system dictate what speed the train will operate.

We just cracked the egg on that. The letter is sitting there pending for approval. I have to debrief Mr. Alexi (ph.) and his team with the -- with John Fairbanks (ph.) and his group; how we're going to move forward with that. But PTC is directly involved with that. We just heard from -- you'll -- I think you got a conference call with Sam later on today. He gave us an update --

Q. Yeah.

A. -- on some of the things that RPD is doing. So we're going to get involved with some autonomous train movements, some ghost track circuits. It's getting ready to get a little tense, from what I can tell. I'm not sure if that -- my little 10-man team, if we're going to be able to keep up with it. But we'll try.

But the class I's come to us and they're kind of open with what they would like to do, the flexibility that the system allow

them to have. I mean, we notice they -- you know, four billion dollars across the industry to put in, of course you're going to want to take advantage of what you can with it. So we knew things would come like that.

I didn't think it would be this fast. But yeah, it's coming. Some of the features that -- I mean, some of the functionalities are still being upgraded in the systems. They're now looking at the target management system which allows them to stage their equipment and get closer to really signals and assets that will warrant penalty applications.

Couple of them are using the portable remote terminals for their wayside -- for their maintenance way employees in the field; that ties directly to the restrictions associated with work zone are being created where the onboard crew is now talking directly to the people in the field instead of going, you know, this relay through to the dispatcher. He's confirming directly with the crew what his authority is. So we've got -- that's actually being utilized in a couple railroads. So things like that are moving forward.

MR. MANUTES: You got that, Ruben?

MR. PAYAN: Oh, yeah. I was going to say, you touched on a couple of things that we're actually really interested in. I'll let John go first.

MR. VISER: Oh, okay, go -- no --

MR. MANUTES: Yeah, I was going to --

MR. PAYAN: He caught on to it, too.

BY MR. MANUTES:

Q. Yeah. Well, I'm -- a couple of things. Actually, could I get -- just an administrative thing. What subdivision did you say BNSF is doing the onboard movement authority?

A. Well, we tested on it a Plainview Sub initially.

Q. Plainview.

A. But it's actually going on the Afton Sub. And that's in between -- I want to say -- Oklahoma and Texas, I believe. That's where the Afton Sub is. That's where we're going to --

Q. Okay. All right. Thank you. I agree with that.

A. Yeah. We're going to get out there. I believe once the administrator gives us approval, that we're looking at either late October or early November to start doing formal testing of that. We've done some unofficial testing of about 12 weeks last year. And that was in TCS territory, TWC with ABS, and TWC territory, dark territory. So we tested on three different segments with the method of operations.

Q. And there is a waiver that needs to be approved to get that going?

A. Yeah. We -- yeah, a test waiver request was submitted. It's been -- well, the draft letter has been approved. It's just waiting for a signature from the -- from Mr. Alexi, the -- our department head.

Q. I thought David mentioned in passing to me that there -- that

Subpart I allowed for no waiver on that somehow. So it's good to know there's going to be some paperwork and an approval on that.

(Crosstalk)

A. No, Subpart I, that's what they submitted it to. It's drafted against Subpart I. The -- it's called a 236.1035 test request waiver is what they drafted it. And it's per Subpart I, 1035.

Q. So I want to ask you, on these portable remote terminals in the field for maintenance away employees, maybe you can just expand on that. It sounds like -- one of the things we're really interested in is eliminating that -- where a dispatcher can -- could remove a work zone on a guy. Right. And maybe he doesn't know it. If a dispatcher was able to make a mistake today and remove a work zone, you could have a dangerous situation.

A. Right.

Q. So can you talk to how the remote terminal might play into that.

A. Okay. Here's how it -- those are being configured right now. Let's say that a track crew goes out there and they decide they want mile post one to mile post two. That employee actually generates the request. So he creates it. He then sends it to the dispatcher. Dispatcher reviews it, acknowledges it, or amends it to what he needs to be. If he amends it, it has to go back to the maintenance away employee.

If he approves it, it's acknowledged right there. The

maintenance away employee gets notification that he now has been granted permission and this segment of railroad is now his. That is -- then generates a mandatory directive that goes through the dispatching network that now goes out to the train crew -- to the onboard -- equipment onboard that the PTC system now will enforce this work zone.

When the train is within five miles, he'll get a notification that you in approach of a work zone. He can now reach out and contact that employee directly himself. He doesn't have to go through the dispatcher to grant permission of -- am I required to stop, reduce speed, or what, to enter your limits.

Once he confirms he's reached -- once he reaches out to him, he has to acknowledge that he established contact with that employee. Then he has to confirm that he's gotten authority for that employee to move through those work limits. So there's a two-prompt action that he has to do with the onboard screen itself. It's not just a verbal thing. He's talking to him verbally. But he still has to acknowledge, get permission on the PTC screen that he was granted authority to enter those limits.

Q. Do you know if the worker on the ground has to also confirm on the device, yes, I do give permission?

A. He doesn't confirm. He just gets notification that the crew is confirmed. He gives them authority and then he can -- or he can witness that the crew is confirmed. But he doesn't --

Q. But he didn't --

A. He doesn't respond from that point.
Q. He gives them verbal authority.
A. Yes.
Q. And then the crew confirms it twice on the screen. And then he sees back in the field on the tablet that they've confirmed it.
A. Yes. I believe that's how it works, yes.
Q. And is the process for taking away the authority -- when he's done with his workday and he wants to give back mile post one to two to the dispatcher, is the process for unwrapping the authority kind of the same thing between the --
A. Yes.
Q. -- dispatcher and the maintenance away guy?
A. Yeah, he -- yeah. The guy that established it -- or the unit that it was established under now has to reach out to the dispatcher and says, okay, we're looking -- we're complete, we're ready. If it wasn't based on time expiration, we're ready to cancel this notice. He has to directly call the dispatcher. The dispatcher has to go through the process of doing the canceling, stamp and time it. And then send it back to him. He then sees that his track and time or his work zone has now been terminated and it time stamps with the, I believe, the initials of the dispatcher that initiated that process.
MR. PAYAN: Oh, nice.
Q. So the dispatcher can't just take it away?
A. He shouldn't be. I can tell you right now, he shouldn't be

just taking it away because it's -- I mean, it --
Q. Yeah.
A. If he does, you know, we got record that he did it improperly.
Q. It sounds like it needs a confirmation on the tablet though, hopefully.
A. Yes, yes.
Q. Does that sound about right, yeah.
A. He gets confirmation. So even -- let's say you're standing out there and then somebody inadvertently took your work, he'd know it because he'd get notified on this thing that your limits are no longer in existence.
Q. That's how it would work -- is that how it would work for a time-based -- so I get mile post one and two --
A. Well, the time --
(Crosstalk)
A. -- just expire. Yeah, it would just expire.
Q. (Indiscernible).
A. And --
Q. Well, hopefully, it would tell him.
A. Yeah, I'm not sure what it does in the field. But I know on screen it expires. And on the train, if the train is within the limits, it won't take it off until he's actually exited the territory.
Q. What -- do you know -- do you have a lot of manufacturers

that are making those devices? Or is that just one manufacturer and one system that's making those?

A. I think it -- I believe CN and BN are the only two railroads that are using it right now. And I think it's just one manufacturer.

Q. Who is that? Do you know?

A. I'm not sure, to be honest.

Q. But those are out there being tested right now on CN and BN?

A. I believe so. Yes.

Q. Interesting.

A. Believe we got them in testing mode right now.

BY MR. PAYAN:

Q. So you mentioned tightened work was being done on -- excuse me. Tightening the target and then being able to stop closer?

A. Yeah, target approach management. I don't know how often you see a report. We get reports every now and then about train is trying to -- the railroad is trying to stage equipment, you know, on the siding. The siding is unmapped track. But that signal to enter the main is PTC entry. Well, the deliberation distance to signals is 1500 feet. So IETMS, for example, starts recognizing that signal if it has been initialized at 1500 feet. So as they're staging the equipment, it will give them warnings and will put them in penalty if they're not operating -- prepared to stop at that signal.

But a target approach management gives them a little more

flexibility of staging that equipment because we don't want them cutting it out while they're doing it because they could actually encroach or get by that signal and get into the -- get up there on the main line track.

Q. Sure.

A. So we told them that wasn't -- we didn't like that practice. So we asked them to look at making whatever modifications they could to prevent having to cut out. So that was one of the things that they looked at with modifying the target approach process which is -- it's called TAM, but it's target approach management systems which allows them to creep up to zero speed targets, whether it be a stop signal, a work zone, a malfunctioning crossing, and get as close as possible, but not get by the target itself.

Q. So do you know if any of that work is being done for terminal stations, especially passenger terminal stations?

A. Well, at this terminal -- well, it's -- well, with IETMS it's across the board. It's an industry thing.

Q. Yeah.

A. So it's not just terminals. It's all areas. What we're doing in the terminals where we've got exemptions is we're asking them to put in repeaters and things of that nature. Like Chicago Union Station. If you go underneath the shed at Chicago -- or underneath the old post office where there's no GPS, so target approach management is no good because your system is not valid

anyway. We don't want them operating in restricted mode because all that enforces is a restricted speed. So they're looking at doing radio repeaters or target repeaters down there to -- well, so that the system will monitor those critical assets that are considered -- that are underneath the bridges or the tunnel -- or in tunnel-type atmospheres. And yeah, target approach is going to -- going to fix that.

But we also -- they're also looking at dead reckoning, extending the operations of dead reckoning to allow wheel tach (ph.) to where if you've got track -- if you've got map track and you've got good GPS up to a certain point, wheel tach can operate for 10 miles to where we can actually still say, this train is on this track, moving at this speed, and is at that location. So that's -- and then that was -- that is in the last -- I want to say the last software version that was put out. So that is actually in place and in operations right now.

Q. Oh, really. Okay. In Chicago?

A. I'm not sure if Amtrak is utilizing it yet as far as Union Station goes, but the software is there for them to be able to start testing or monitoring it. I'd have to reach out to them. We just gave them that approval letter like two weeks ago. So I need to reach out to them and get an update on that.

But that was part of -- it was really part of the operations through the tunnels of BNSF on the northern -- northwest area. And not -- and to avoid having to cut out to get through those

tunnels. So that was really the main reason for it. And they were like, well, if we can do that -- if they can do that in the tunnels, why can't they do that at these terminals? So --

Q. Right.

A. It was one of those, let's see if it works there, then we'll see if it works here. So that's where we are with that right now.

Q. Yeah. Because we had a few accidents on the Long Island, specifically, of New York where they did just what you said. They -- the last signal they went by, they gave them a restricting to send them into the terminal on a restricted signal and sure enough, the guy went in restricting right up to the bumping post at restricting speed.

A. And then (indiscernible), right.

Q. So yeah. So we're looking at the PTC solutions for that.

A. Believe me, we did not want to give them those exemptions. But at the time when it was being implemented, there was nothing there to actually support it. But we've now been moving forward with trying -- and it's not just Long Island, Chicago. I mean, we've got issues in Milwaukee and all the other terminals where you got poor GPS which is one of the main things there.

But they've looked at, like I said, wheel tach, which actually looks at the revolution of the wheel to determine your speed and things of that nature. If you can establish one point where you've got good mapping where you can say, he was here, then once GPS goes away, wheel tach can assure you that you're

monitoring him up to 10 miles. And pretty much be precisely about where he should be. It's pretty good. It's pretty on. As long as they've got the proper wheel calibrations in and everything. And the configurations, and the constant configuration is all right. You know, it kind of keeps pace with what they're doing.

Q. So at that point, they're working towards a target at the end of the platform or at the end of the terminal?

A. If it's a signal or -- yeah. Whatever is considered the end of their authority, those limits. I know we made them put stop signals at the end of the platforms in the terminals now. So that's actually a stop signal instead of the bumping post actually being the target itself. Yeah. They had to place signals at that locations. Yeah.

MR. PAYAN: Oh, wow. That makes sense.

BY MR. MANUTES:

Q. So it sounds like you're working towards reducing the number of these main track exceptions that you've got. You don't want them out there anymore than anybody else does. Right?

A. No.

Q. You want to try and get them --

A. No. We like them to utilize the system as much as possible anywhere they can. Like I say, there are situations where we can't -- you can't do anything about it. But those that we can, we're pushing them towards trying to do that.

Q. Can you help me understand. Other -- like what are the

situations where you can't do anything about it? These are kind of new to me. And I got -- I had a conversation with --

A. Well --

Q. -- our new chair that I didn't answer very well.

A. Some -- I have to go back to a terminal or something like that just -- or a bridge, something like that, so we can talk about it.

For example, you've got Washington Station, you got Union Station, you got Long Island, whatever. The trains that are already in there, you know, if you can't get some type of signal to them, whether it be radio, satellite, or whatever, then there's no way they're going to be able to come out with an active signal until they get to a certain location to where that information can be provided. That's what we're trying to rectify. That's what we're having them try to fix.

If you could put radio repeaters there or GPS repeaters there where the train can -- location can be identified, then the system can say, okay, I know you're here, we've got some place to start. The problem is it can't do that everywhere. That -- and that's what we're finding to be a headache.

You know, going into Chicago -- once he comes off of the main line -- or going into the station, yeah, we can get to that platform, unload those passengers, do what we got to do. When we get ready to turn to come back out, now we've got a problem. Because you can't get that other end active. So he's going to

come out due to the MTEA at restricted speed until he can get to a point where he can get either good GPS, good radio, or whatever, so that locomotive can now transition to an active state.

You can't really -- it's hard to do something about that. We took care of one way of it but we weren't -- they weren't able to really fix the turn end of it. And they're trying. I mean, they're still looking at things. Like I said, radio repeaters and things of that nature, but it doesn't always work in certain locations.

And then you got to look at some of those where they got (indiscernible) that can cause other kind of interference. It's very complex based on some of these locations, inter-city locations, you know.

MR. MANUTES: Okay, thanks.

BY MR. PAYAN:

Q. So before I forget, the BNSF system you're talking about, the virtual -- the virtual block.

A. Um-hum.

Q. Is that to replace PTC or is that the method of operation that PTC --

A. No. That's to change the method of operation. PTC will still be part of it. PTC is actually the main part of it. It is actually to develop a new method of operations to where we've already given them authority to have the mandatory directives delivered electronically to the onboard. This is now saying,

okay, this is going to be a form of operations. Onboard movement authority will be generated by the dispatcher, electronically given to the train. The train will now be able to enforce these limits and move forward.

The virtual block thing, we've already granted some systems virtual blocks like PTC entry locations where they didn't have signals coming off of yard tracks or storage tracks, things of that nature. Now, they're pushing to use this process on main lines. So that's where the virtual block stuff come in.

They're not doing that this year. We tested it. The virtual blocks will not happen this year. The onboard movement authority is the only phase that we're going to roll through this whole process. The virtual blocks we're going to have to have them get back to us because at locations where you've got signal logic, it's probably good because the signal logic remains. It's a vital part of the network. You just going to take the wayside signal out or move it, whatever.

But what about locations where you didn't have signals and it was track warrant authority. How are you -- where is the vitality in that network. So they're not looking at -- the virtual block stuff won't come until probably another year or so. It's just really the movement authority that we're going to test starting October or early November. Just that portion of it.

Q. So how --

A. That's where they're headed though. They're trying to go

virtual. I can tell you that now. Yeah.

Q. Yeah, yeah. No, we've been reading a lot about it. I just didn't know what exactly the -- how each interacted with the other one.

A. Yeah, it's two phases of it. They're doing the movement authority part first and then they're going to come back and then dive into the virtual block segment of it. Yeah.

Q. So how about making the rear of the train a PTC target? Are you doing any work on that?

A. In the -- yeah, actually, Sam -- he is going to talk to you guys about that later. Yeah. Our research department is looking at some things like that. Wabtec (indiscernible) train device and why it was never actually brought into this whole -- well, number one, you got to remember, PTC wasn't a train separation requirement. It was train control. So when you start looking at the end of train devices to -- you're looking at train separation which is another different concept.

But there are devices that can be incorporated into PTC because the consist -- and the weight and the length of the train is part of the buildup. So we know that. We know the length of the train. If it's correct, we know that and now it's entered into the consist configuration. Because of the braking algorithm, it's based off of that. So we know that. So all they're doing -- if they can decipher or create this device where the data can be input to monitoring end of train, yeah. It can be done. But that

wasn't -- you got to remember, in the beginning, that wasn't a PTC requirement. We're migrating to that. And we're encouraging that. You know, we want them to be able to do that because number one, you know they want to increase capacity. So knowing where the end of the train is gives them that authority, you know, or gives them that ability. So yeah, it can be done. They are looking into that. I can tell you that. But Sam will give you more information on that because his group is directly involved with that.

Q. So is Subpart I already -- can that accommodate if they start putting these end of train as targets?

A. It doesn't have to be -- it can be developed under Subpart H and then just incorporated into PTC. It can be a Subpart H certified device. And it can be incorporated into PTC.

Q. So no new regs will have to be developed right away?

A. No, no, no. No new regs for that. We'll have to look at some regulatory things like ghost tracks, certain things of that nature. I'm quite sure you've heard about stuff like that. But --

Q. We have.

A. (Indiscernible) EOTs are for identifying units -- equipment that they want to identify for train separation purposes, if it's developed under Subpart H, we can migrate it in ITCS and it can be added, identified as an addendum in the Railroad Safety Plan and we can continue to move forward. ITCS, if you remember, I don't

know if you know that system, but that was originally developed under Subpart H.

Q. Yeah.

A. What we did was -- we tooled it and tweaked it and worked it to where it would meet the parameters or meet the standards of Subpart I, you know. So it can happen.

Q. Oh, okay. Well, that's good. So there's flexibility.

A. Yeah.

Q. How about -- speaking of ITCS, how about the grade crossing safety and PTC? Any new developments there?

A. We got a couple practice going on. Metrolink or -- not Metrolink. I think -- yeah, Metrolink is doing a near station stop project. I think -- either them or North County. One of them is doing a near station stop project, which takes into account the commuters that have to stop at stations that have crossings within the proximity of those locations to prevent the unwanted long warning times.

Q. Oh.

A. Of course, you know, we got ITCS which does the wireless crossing activations in Michigan. There was a reduced function of that system brought into Illinois for the Illinois High-Speed Rail project from St. Louis to Chicago. We call it XITCS. But basically, it's the crossing -- wireless crossing activity migrated with IETMS. So you've got two systems that are being utilized for high-speed rail passenger rail trains in Illinois.

And it's the wireless crossing of those systems that was brought over to do that. RTD, of course, you know about their crossing. Wabtec's wireless warning -- wireless crossing activation system. Which to be honest, if they hadn't have chose RTD, it would probably work, but they chose to do it on an industry that was pretty much almost like transit. So you've got high traffic, short rail lengths, and you're running 120-some trains in 26 miles. That wasn't the best place to probably test that system on. Well, we know it wasn't.

But can it work? I believe it can work. I just think that that was the wrong place to put it on. Why was crossing -- were you monitoring the health of that crossing, you're validating the preemption works at that crossing, and you're giving it proper warning time without having to deal with a fixed point like the conventional track, track circut, is -- you can't argue with it. It works all the time. You don't have to deal with rail shunting and things of that nature.

It's a system that looks out and can tell you if all your gates are down, all your lights are working. That's what the wireless crossing stuff does. It actually does a health check on that crossing before they get there which is beautiful. I wish they all would -- could do that. But some systems can't.

MR. PAYAN: Yeah. No, that would be nice.

MR. MANUTES: Ruben, if I can for a second.

BY MR. MANUTES:

Q. Are there other places where Wabtec is considering rolling out or have they rolled out the wireless crossing features on other railroads besides RTD? I think Caltrain came to mind at one point. They were looking at it. Have we got there yet? Do we know?

A. It's not Wabtec. But yeah, Caltrain has got -- I can't think of the name of it. But yeah, it's --

Q. Okay.

A. -- two entities in California testing it. Caltrain and Metrolink are both doing some wireless crossing. Oh, Caltrain is doing a two-circuit -- two-speed stop thing, I think. It's a two-speed check system to account for freights that go through and then a different speed or setting or parameters to account for commuter passenger trains that go through. That's what that's -- that's where they're doing the two-stop system.

Metrolink has got the near station stop. Of course, we got the wireless crossing in Denver. The Brightline product down in Florida is going to go with Wabtec-based products or probably going to use the same product that was generated for RTD. Then, of course, ITCS. Those are the only ones right now.

Q. And that sort of -- I mean, that would be one place where we maybe could make a difference with PTC is grade crossing safety. Right? So health monitoring. Could systems like that be layered into freight operations where PTC is talking to the grade crossing and grade crossing is saying, yeah, I'm healthy; no, I'm not

healthy? Is that --

A. Oh, yeah.

Q. -- a possibility in the future?

A. I would imagine that where this segment -- well, the segment in the Illinois, UP runs freight track that go there. And I would imagine that UP is going to adopt that after this break-in period with Amtrak. It was put in for Amtrak for a high-speed operations but I guarantee you once they start seeing how the system is providing the notifications of the health of a crossing, that they're going to want to take advantage of that for their freight trains, too.

Q. Yep, good.

A. NS uses it in Michigan. I will tell you that. They're ITCS has flipped in Michigan on the western part of the state. So they're using it on the western part of Michigan. It operates on the Amtrak Michigan line. Yeah, NS uses it. So it's being used. Just not being pushed. But I think moving forward, that's the way to go. I don't see -- I don't know why people want to argue with that.

MR. MANUTES: No. I don't want to -- can I change gears for a quick second or do you have something, Ruben, on that?

MR. PAYAN: Go ahead.

BY MR. MANUTES:

Q. I wanted to ask, Calvin, what do you see changing in the future with restricted mode? You know, maybe -- I'm not super

familiar with the rules but I know if they want to do some mainline switching, they can get a certain amount of miles I think in restricted mode. But it seems like we've got some accidents in our docket where -- like Kingman, Arizona, you had two trains moving at restricted speed right into each other. I think we've seen that in some other places. Maybe in Ohio.

But what's the future of restricted mode? Considering -- like, we all know, right, trains do need to couple together occasionally. Right? That's how --

A. Right.

Q. -- mode works.

A. Right, right.

Q. But how do you keep them apart when they're not -- yeah, how does that change in the future?

A. Right. Well, let me make sure I'm -- we're talking about the same thing. Now, operating at restricted speed and operating in restricted mode, that's two different things now. Okay?

Q. Maybe you can fix my knowledge on that then. Thank you.

A. Okay, now, operating at restricted speed is based on signal authority, right, or permission past the stop signal. There is no targets being enforced in front of them except for a zero-speed target. It's like a signal or a work zone or something like that. It doesn't see the other -- it doesn't see equipment in front of it.

In restricted speed, they have to acknowledge switch

positions. That's restricted speed. Now, in restricted mode, number one, they have to transition from an active state of their system to restricted mode. Now, what restricted mode does is, now you're no longer looking at any targets. It was strictly a function that we gave them to utilize for switching or set-outs or things of that nature. It wasn't supposed to be utilized and operating up and down the main line, things of that nature.

So all restricted mode does is enforce an over speed at restricted speed. That's all it does. After, I want to say that accident in Ohio, we had them go back and make changes to it. What it does now is, a maximum allowable operating distance is 26,000 feet. And he has to acknowledge that he wants to continue to operate at restricted mode. If he stops, he has to acknowledge that he -- and initiates movement, he has to acknowledge that he wants to continue at restricted mode. If he reverses direction, he has to acknowledge that he wants to continue in restricted mode. Failure to acknowledge either one of those three gives him a penalty of 30 seconds.

The 26,000 feet came in because -- I think it was -- to be -- I think it was UP said that they had yard tracks or something of that nature where it could be up to that long as far as for some train configurations. And they didn't want to have the engineer having to go from active to yard -- active to restricted mode, active, restricted mode, while configuring their equipment.

So that was what they presented. That's what we granted. If

we need to approach it again, we probably can. But I think the last go-rounds were -- that's what they -- the adding of the timer and the adding of the acknowledgment -- once, like I said, he hits that maximum distance, changes direction, or he stops, the engineer now has to acknowledge he wants to continue to operate it in that mode. If not, a penalty is assessed 30 seconds and the system cuts out.

BY MR. PAYAN:

Q. So initially, we were being told that the BNSF was pushing for five miles before acknowledging. And I guess --

A. That's about the 26,000 feet. Yeah.

Q. Is it? Oh, so they did go with that. So now that --

A. Yeah.

Q. That change is going to be done with the --

(Crosstalk)

A. -- yeah.

Q. Oh, okay.

A. Yeah, that's in.

Q. But that was done through the AAR standards. Not FRA.

A. The ARA?

Q. The AAR PTC standards or design standards.

A. Well, that was done through the ITC committee. The work group which is --

Q. Yes.

A. Which is -- yeah, through the AAR. But it was based on our

recommendations that they make changes to it. Yes.
Q. Oh, okay, okay. Do you guys participate in that committee?
A. Uninformally [sic], yes. Yeah. We go to the meetings. Yeah.
Q. Oh, okay. Yeah. There was a lot of discussion on the -- either time-based or distance-based before making him acknowledge. And I guess he settled with the distance, going by distance.
A. Yeah. Yeah, he settled with the distance. But like I said, if he stops or reverses direction any time during that move, he's got to acknowledge. If he doesn't, penalty 30 seconds, penalty.
Q. Oh, okay. That's good to hear.
A. John is thinking.
MR. PAYAN: I know. He's thinking hard.
MR. MANUTES: What was the -- was there no distance before you could go into restricted mode and just ride that out as long as you needed to before?
MR. VISER: Prior to -- this is how -- yeah, there was no time associated with it. There was no distance associated with it. It was strictly an operating rules issue. Yeah.
BY MR. PAYAN:
Q. So how about lately we've been hearing all this cybersecurity staff. Is FRA doing anything with PTC and cybersecurity?
A. Well, they've got -- well, yeah, their security -- each system has its own security network or security parameters built for it. But I haven't heard much in regard to security. And the

systems being manipulated.

I know -- nothing on ITCS. And I know I recently went through the security platform with IETMS based on what's going on in Florida. So I haven't heard -- if you guys have heard something, it's new to me. I haven't heard anything about that. But I can -- I don't know -- I guess I can give you the security package that was developed for IETMS if you guys need to see it. I'm not aware of anything.

MR. MANUTES: Yeah.

Q. No. We were just wondering about any work being done. You know, it's shown up on --

A. Oh, yeah. There was -- based on the Appendix E requirements with the level of -- not being able to meet the level of vitality, we had them -- I think they had developed security parameters to support the system.

Q. What was that subpart?

A. Appendix E.

Q. Appendix.

A. (Indiscernible) vitality of the system itself. 236 Appendix E talks about the requirements of a PTC system and the vitality of it and everything associated with it including security.

MR. PAYAN: Oh, okay. Awesome. Do you have anything else, John? I think I'm --

MR. MANUTES: No. I just wanted to ask Calvin -- I mean, before we close it, you know, is there anything that you see

that's a major gap in PTC? Like, what -- in your mind, if you were going to do PTC 2.0 and you were the king of PTC, I mean, what would you include from the safety side?

MR. VISER: I know the main goal is to try to reduce human interaction. I would try to decipher -- if we're going to move towards this virtual network, you know, then we'd have to develop rules to support that. But I think whatever we can do to eliminate or reduce human interaction -- I don't know if I would go with autonomous right now. But reducing human interaction with the system is what we should be striving to move for. And 2.0 should be looking at reduction of what human requirements will be needed to support the operation. Yeah.

I'm not saying we got to go fully automatic. But we got to look at something to where people's objective or people's judgement has to be taken out or can be reduced to continue to move forward. So that would be -- that's what I would be looking at. You know, where can I intervene --

MR. MANUTES: I appreciate that.

MR. VISER: -- at and cut out this person having to decipher what's right or what's wrong.

MR. MANUTES: Yep. I appreciate that.

MR. PAYAN: Yeah, that makes sense. That makes a lot of sense. That's all I got, John, unless --

(Crosstalk)

MR. VISER: I wasn't trying to be buff with you guys and

showing off my muscles here but I had rotator cuff surgery about two weeks ago so I have to wear this brace. And it's easier to just not have a shirt on when I have it on, you know. But good to see you, Ruben. I hadn't seen you in a while, man.

MR. PAYAN: I know. Good to see you. I was kind of toying with the idea of putting on a tank top myself. After seeing you, that looks kind of comfortable.

MR. VISER: No, it wasn't --

MR. MANUTES: I was thinking if I get a chance to talk to Gabe again, I'm going to say, he -- you know, Calvin intimidated us. He did a good job. He --

MR. VISER: No, it wasn't nothing like that. Good seeing you, John.

MR. MANUTES: I'm sorry about your shoulder though.

MR. VISER: Yeah. Well, I had the right one did last year. I was in an accident a few years ago on my motorcycle and I probably should have -- well, I thought not to go on the ground so I wind up messing up both my shoulders. This one was done last year and this one I had done a few weeks ago. So hopefully it will be a recovery as well as it was on the right one and I'll be back to normal by the end of this year. So --

MR. PAYAN: Well, good, good.

MR. MANUTES: Yeah, I hope so. Best of luck to you. Thanks, Calvin. I know it took a long time to get this set up and we got to jump through all these hoops with our two organizations but

it's good to see you and good to talk to you again.

MR. VISER: No problem. Yep. You, too. Like I said, let me know if you need anything.

MR. PAYAN: I appreciate it. Thanks for helping.

MR. MANUTES: Well, if you're ever out in Denver, let me know.

MR. PAYAN: Thanks for your time. I appreciate it.

MR. VISER: Oh, I'll probably be up there before the end of the year. I'll let you know. Because I know I got to go out there again.

MR. MANUTES: Yeah.

MR. VISER: All right, guys.

MR. MANUTES: Yeah, give me a shout. Good to see you.

MR. VISER: Yep. Let me know if you need anything. Take care.

MR. PAYAN: All right. Thanks.

MR. MANUTES: Bye-bye. Thanks.

MR. VISER: Yep.

(Whereupon, the interview was concluded.)

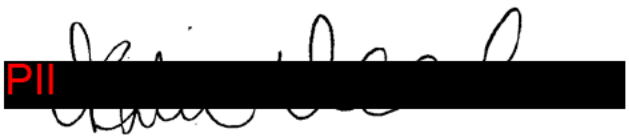
CERTIFICATE

This is to certify that the attached proceeding before the

NATIONAL TRANSPORTATION SAFETY BOARD

IN THE MATTER OF:	POSITIVE TRAIN CONTROL SPECIAL REPORT Interview of Calvin Viser
REFERENCE NO.:	DCA21SM003
PLACE:	Via Microsoft Teams
DATE:	September 23, 2021

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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