

.UNITED STATES OF AMERICA

NATIONAL TRANSPORTATION SAFETY BOARD

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Investigation of:

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NEW JERSEY TRANSIT TRAIN #1614
ACCIDENT AT HOBOKEN TERMINAL
AT HOBOKEN, NEW JERSEY
ON SEPTEMBER 29, 2016

Accident No.: DCA16MR011

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Interview of: SCOTT WORDTMANN

Via Telephone

Thursday,
February 23, 2017

APPEARANCES:

CY GURA, Railroad Accident Investigator
National Transportation Safety Board

JOE GORDON, Railroad Accident Investigator
National Transportation Safety Board

PETER LAPRE
Federal Railway Administration

DAVE TYRELL
Volpe Center

JOHN ESHRAGHI
Volpe Center

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I N T E R V I E W

(1:06 p.m. CT)

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3 MR. BUCHER: My name is Cy, C-y Gura, G-u-r-a. And I'm an
4 investigator with the National Transportation Safety Board, and
5 this informational interview is being conducted on February 23rd,
6 2017, at approximately 1:06 p.m. Central Time, with Mr. Scott
7 Wordtmann. Mr. Wordtmann has agreed to share his knowledge of the
8 bumping post, their design, and their installation process.

9 The purpose of this investigation is to increase safety, not
10 to assign fault, blame or liability. The NTSB cannot offer any
11 guarantee of confidentiality or immunity from legal certificate
12 actions. A transcript or summary of the interview will go into
13 the public docket.

14 The interviewee can have one representative of his choice.

15 Mr. Wordtmann, do you have a representative with you today?

16 MR. WORDTMANN: I do not.

17 MR. GURA: Okay. I'm going to have everybody identify
18 themselves for the record. Again, my name is Cy, C-y Gura,
19 G-u-r-a, investigator with the National Transportation Safety
20 Board.

21 Mr. Wordtmann, would you please identify yourself, and your
22 title, and who you work for?

23 MR. WORDTMANN: Yep. My name is Scott Wordtmann. S-c-o-t-t;
24 Last name is W-o-r-d-t-m-a-n-n. And I'm the president of HJ
25 (Skelton) Canada Limited.

1 MR. GURA: Okay. Joe, would you identify yourself?

2 MR. GORDON: Joe Gordon, G-o-r-d-o-n, NTSB rail accident
3 investigator.

4 MR. GURA: Pete?

5 MR. LAPRE: Peter Lapre, L-a-p-r -- Federal Railroad
6 Administration, Passenger Division Specialist.

7 MR. GURA: And Volpe?

8 MR. TYRELL: Dave Tyrell, T-y-r-e-l-l. Senior engineer with
9 the Volpe Center. I also got a colleague here.

10 MR. ESHRAGHI: John Eshraghi, E-s-h-r-a-g-h-i.

11 MR. TYRELL: Your title?

12 MR. ESHRAGHI: Mechanical engineer.

13 INTERVIEW OF SCOTT WORDTMANN

14 BY MR. GURA:

15 Q. Okay. Mr. Wordtmann, do you mind if I call you Scott?

16 A. That would be perfect. Thank you.

17 Q. Okay, Scott. Scott, I'm going to -- I'll lead it off just by
18 asking you, what is the purpose of a bumping post at the stub end
19 of a track?

20 A. Well, fundamentally, it's pretty much a passive safety
21 device. Depending on the situation and the layout, it may used in
22 combination of other things, whether it's part of the train
23 control, mechanical trip switches. It's sort of the last line of
24 defense. And it's used -- the idea obviously is not to hit it,
25 but it's used in situations where operators or unmanned trains, of

1 course, overshoot where they're supposed to be stopping.

2 Protecting industrial properties, obviously public, both on
3 platforms and on the train as well. The design behind it is to
4 safely stop the train, minimizing injury or worse, and damage to
5 the train and infrastructure around it.

6 Q. Okay. And how are they designed? What parameters are used
7 to design a bumping post?

8 A. The main items we require initially to engineer a solution,
9 obviously the weight of the train and an anticipated speed in case
10 of an impact. You get into other more minor items which are
11 addressed during design, which is gauge of the track; is there an
12 uphill or a downhill gradient, because that will affect obviously
13 the forces involved; rail profiles, cant and non-canted rail,
14 which are very minor things. I mean, that's more of a design
15 issue. But the ultimate are the factors weight, speed,
16 uphill/downhill, because that's going to give you your variables
17 as the engineers go through and calculate what needs to be
18 designed and how can we safely stop this train.

19 Q. Okay. And in the installation process, the installation,
20 does it have to be precise according to the design? Can it be
21 modified? Or if it is modified, does it have repercussions?

22 A. Well, you've got several types -- or you've got three main
23 types of bumper stops. In general, when it's designed, you've got
24 a pure friction one which is sliding, and friction itself is
25 dissipating the energy and bringing the train to a stop. Then you

1 have fixed ones with hydraulic shock absorbers. It could be one,
2 could be two, could even be three, depending on the application.
3 And then you have, I'll call it a hybrid, which is the friction
4 with a hydraulic on it for certain circumstances.

5 In all cases, you're looking at the energy that needs to be
6 dissipated and then the distance it's going to be dissipated in.
7 In the case of a pure hydraulic, you have a much shorter distance
8 obviously. It could be a 3-foot stroke. It could be, you know,
9 less than that. So you are somewhat limited as far as speed and
10 weight in a pure hydraulic situation. Notwithstanding, there are
11 some very large ones, but still.

12 In a friction application, you are using slide distance. So
13 as these are engineered, we take what the client's requirements
14 are, such as -- for an example, 10 miles an hour and it's a 1
15 million pound train. And as we go through the process, we will
16 come up with a solution that will say it's going to slide X number
17 of feet or you need a hydraulic shock absorber that's this size.
18 And so the parameters are very specific based on what we're told
19 from the client -- speed, weight -- this is what you can do.

20 What we engineer towards is we like to see an average
21 deceleration rate of 0.3 g's or lower. Some places will go as
22 high as 0.5 g's. It's not really all that bad. They probably --
23 going through a switch, the passengers would feel more of a jolt
24 than that would be. But we aim for 0.3 g's, which we -- Rawie
25 (ph.), the people we represent, have learned over the last 105

1 years that you're going to very much minimize or negate injury,
2 damage to train and property, and things of that nature.

3 So that's the grail, the 0.3 g decelerate. And then we put
4 all that together and do the calculations and come up with a
5 suitable size bumper stop, a suitable combination, whether it's a
6 hydraulic plus a friction, and how much room it's going to take to
7 install this, because that usually is the number one issue as
8 we're going through these processes. Especially in the existing
9 locations, how much space can you give up, for lack of a better
10 word, to install such a safety device.

11 Q. Okay. And the retardation of the kinetic energy, that is
12 under the assumption that it's not under power, it's under a
13 slowing condition? Or what is the difference, you know, if it's
14 under -- if the train is still under power or if there's an
15 emergency braking from an overspeed or something of that nature?

16 A. Everything is designed on the assumption that there is no
17 power at the point of impact. I don't know of any time they
18 designed anything to arrest a train that's under power because
19 it's probably safe to say a train that's carrying a million pounds
20 worth of cars, passengers, whatever the case is, is going to just
21 continue pushing this down until it runs out of room. And then,
22 as we've seen before, it either vaults out of the track or, you
23 know, does a combination of things. So the criteria is there's no
24 load on it at the point of impact on; you're still not driving the
25 wheels.

1 If we know in an under power situation what the force is, you
2 can comment on it and say, okay, you're going to need something of
3 this size. But it becomes a very tricky situation. Obviously,
4 the trains, as you know, are very powerful and they can push that
5 a lot quite nicely, unfortunately.

6 Q. Okay. From our previous conversation we had, you mentioned
7 that you had been down in Hoboken terminal; is that correct?

8 A. Yes.

9 Q. Okay. And you've seen the bumping posts that are present
10 over there. Basically they're a concrete block.

11 A. Yes.

12 Q. And I believe their design dates back to like 1907 or
13 something of that nature.

14 A. That's my understanding. About 100 years old. Yeah.

15 Q. Correct. Now could you tell me, what are the problems with
16 having 100 year-old bumping blocks as compared to the train
17 changes and stuff of that nature now?

18 A. The primary thing is it's a non-energy absorbing way to stop
19 a train. So it's really -- even in a case of a very low speed
20 impact, you are going to have passengers tumble. Your only,
21 usually, way you dissipate energy is in the coupler itself, which
22 has some give on the train. And that's a very, very, very limited
23 piece of equipment to handle something that's, you know,
24 significant weight. And even at 3 miles an hour, when you go to 3
25 miles an hour to zero in the space of, you know, a couple of

1 inches, that's not a good idea from a passenger standpoint because
2 it comes out of the blue and that's where the tumbling comes in
3 obviously, and things even worse than them.

4 So we don't, as a rule, recommend anything that's not energy
5 absorbing. We do have them in yards with very, very low speed,
6 with just a fixed bumping post where, you know, the train sort of
7 rests up against it and that's it, when they're parking cars. But
8 not in revenue service. We would never recommend anything that's
9 non-energy absorbing in revenue service. Just, it's not going to
10 do the job. It's either going to shear off and become useless
11 anyways, or if it is strong enough to stop the train, it's pretty
12 safe to say that there will be significant damage to the train,
13 and more importantly, there would be significant injuries to the
14 passengers, I would suspect.

15 Q. Okay. What happens when a carrier railroad makes a change in
16 their equipment or design, do things have to be reconsidered with
17 the bumping post? More of a system engineering if there's a
18 change in track structure and a change in the equipment, does the
19 bumping post need to be looked at also?

20 A. Yes. The biggest occurrence we're seeing as time goes by is
21 weights of the train are changing. As transit gets more popular,
22 cars are added and so the weight changes. And that significantly
23 -- talking in terms of, say, a friction buffer stop, will change;
24 it's going to slide further. Which is fine, it will dissipate the
25 energy. But if your design at the end of track is just a little

1 bit further than the original design for the slide distance,
2 you're going to run out of room and either hit the end of the
3 platform with a buffer stop, which at that point in time it
4 becomes a non-energy absorbing obstacle to the train.

5 Anytime where there's speed, or more standard is the weight
6 of the train changes, a transit or anybody using anything like
7 that should examine and talk to the manufacturer and determine can
8 the frame, the existing frame of the buffer stop withstand the
9 changes, the parameters. And if that's a yes, how will it act at
10 that point in time.

11 What we would do is, assuming the bumper stop frame itself
12 can withstand the new forces being exerted on it, and the client
13 says, okay, we need to move it further out, 10 feet for argument
14 sake, we would actually -- we have data plates on all our bumper
15 stops that list the parameters, : train weight, speed, any spacing
16 of the friction shoes behind it if that design calls for it, so
17 all the things that the transit or user needs to know for
18 installation. We would put a new data plate on to reflect the new
19 conditions.

20 That way -- and we recommend from a maintenance standpoint,
21 that as people go around, they can reaffirm that it hasn't been
22 lightly hit and maybe moved a short distance, which is going to
23 infringe on the available slide distance. So it allows you to
24 quickly look at it and determine distance now reflecting today's
25 reality as opposed to 10 years ago when it was first applied, and

1 it's installed correctly.

2 So that is important for any user to keep track on that if
3 things change. And it can be an insidious little creep of a
4 change as you add things, and we do run into it. Most of them are
5 pretty good, but you need to keep an eye on that because it does
6 change your parameters.

7 Q. Well, that would be part of what the new FRA regulation might
8 be, and consider it like a hazard analysis once that is identified
9 in some of these stations. Would that be considered like a
10 possible hazard analysis then of the bumping post?

11 A. Yeah. I mean, as a good exercise, like many other things,
12 obviously, when you're transporting people. I mean, auditing, for
13 lack of a better word, any changes that happen with your trains --
14 you get new locomotives, you add cars, you change your track even
15 and now you've got a downhill gradient of 2 percent -- you know,
16 these locations evolve and it really is imperative if you are
17 going to use a passive safety device such as a buffer stop,
18 bumping post, whatever you want to call it, that you keep track of
19 that and check with the manufacturer: Are you still in a
20 compliant environment for that, or do you need to make
21 adjustments, whether just moving it further out, or you may need a
22 sturdier buffer stop.

23 Q. Okay. Now if I recall, one of the bumping posts that are
24 manufactured through your company or through the corporation you
25 represent is at Hoboken; is that correct?

1 A. Correct. We have one on the main line there, and then we
2 have a number of them over where the light rail comes in there off
3 to the side of the main terminal. But we have one main -- one on
4 the main line there where the incident occurred. That was
5 supplied I think around the mid-90's or so.

6 Q. Okay. And did you get an opportunity to look at that to see
7 if it was installed properly or if anything has changed with it?

8 A. It's in its original position. They were doing work at the
9 back of the track. It looks like they were rearranging some
10 wiring, whether it's signals or power feeds to lights. And some
11 of the rail had been disturbed at the back, which would in
12 infringe on the total slide area, which is not a good idea in that
13 if you do have, you know, a full speed impact, based on how it was
14 designed, it's going to slide X number of feet. And if you've got
15 X minus 4 feet, it's going to come off the back, obviously. It
16 relies on the rail to produce a friction with the shoe. So that
17 needs to be respected in that slide test, that track occupancy,
18 for lack of a better choice of words.

19 Q. Okay. And I also noticed myself, when I was looking at that
20 bumping post, that there was a pair of insulated joints ahead of
21 that bumping post. Does that interfere with the bumping posts'
22 performance?

23 A. It can. And it depends on the distance in front. The other
24 thing that you need to be mindful of, regardless of the style, is
25 the uplift force on an impact. And that comes down to -- once we

1 analyze the site conditions and make a recommendation, we would
2 also say, okay, these are the forces your track is going to
3 experience. Because uplift will tear it out of the rails, tear up
4 the track, and do a bunch of things which basically negates having
5 a buffer stop at the first place.

6 An insulated joint is a relatively weak part of the track,
7 obviously, in a case like that. So we try to design -- we want to
8 -- we don't want the -- obviously you cannot have a joint behind
9 the buffer, any sliding buffer stop, because it's not going to
10 slide past that joint.

11 In front, we look at, especially looking at high uplift
12 situations, how far from the front of the buffer stop any joint
13 would be. We like to design around or ask the client to make sure
14 sometimes they need to relocate these joints.

15 We like to see the center of the front bogie of the car that
16 would be hitting the buffer stop to be past that joint, because
17 the weight of the train now, or at least the first bogie, is going
18 to assist in keeping that rail down where it's supposed to be and
19 not letting the uplift possibly break that joint. So the train
20 itself protects the joint. But we like to design around that
21 because it is a weak link with the uplift. Longitudinal a little
22 bit, but uplift is a bigger danger obviously to the joint.

23 Q. Have you been -- have you had an opportunity to go to the
24 Brooklyn Station and look at the Long Island Rail Road's bumping
25 post?

1 A. No, we have not been out there. We -- on these things, we've
2 supplied a number of buffer stops to -- in the New York area, an
3 awful lot of them, and we always make the offer we'll come out and
4 take a look at things, and if they want recommendations or
5 thoughts and all that. But at this stage of the game, we have not
6 been invited out there to look at it.

7 Q. Okay. In our conversation yesterday, you had had opportunity
8 to look at the one that was on the CTA, where they basically
9 negated some of the friction slide on the bumping post that was
10 originally installed. Could you tell us a little bit about what
11 was done there?

12 A. My understanding -- the original buffer stops that were at
13 O'Hare there in the CTA, are very, very old, are Godwin Warren
14 actually, and there was a licensing arrangement between Rawie and
15 Godwin Warren decades ago.

16 Same basic principle as the friction stop. And from my
17 understanding, it's long before my time, they slowed the potential
18 impact speed down, which allowed them to have less slide distance.
19 And that center track being the shortest of the three, they put
20 that into play, and moved it back a little bit -- you have less
21 slide -- in anticipation of a lower impact speed. That's how I
22 understand it. Again, before my time, but that's sort of the
23 understanding on my part.

24 Q. Has a new bumping post been installed there since that time?

25 A. Yes.

1 Q. Okay.

2 A. Yeah. We put a -- fairly interesting design, in that
3 normally a friction buffer stop has the shoes either under the
4 physical stop itself, and in cases where you need even more
5 stopping power without getting too high of a deceleration rate, we
6 can either put shoes inboard on two auxiliary rails inside the
7 gate, or stack them behind. Stacking behind obviously increases
8 your track occupancy because they physically take space as it all
9 collects and slides back.

10 In the case of Chicago there at O'Hare, again, with the
11 limited space, the design actually pulls the shoes. So the train
12 would pass over the friction shoes themselves and hit a very
13 compact buffer stop upright. So it maximizes the space they have
14 for slide distance, but it also gave the opportunity to put enough
15 friction shoes on the apparatus to control the train under the
16 parameters that they gave us.

17 So it's a fairly unique design in that regard. But the
18 intent is, as is normal on a lot of these existing sites, is to
19 minimize how much track occupancy you need behind the buffer stop.

20 Q. Okay. Those shoes that you are speaking of, would they be on
21 the running rail prior to the bumping post, or are they in
22 parallel rails that are underneath the bumping post?

23 A. In the Chicago one, they're on auxiliary rails inboard.

24 Q. Okay.

25 A. And that's just the nature of the design. Because that

1 had -- it's a fairly old installation as far as the concrete and
2 everything. We did not have, or it was discovered by Chicago,
3 there's not a lot of concrete depth and the danger that they
4 wanted to identify and mitigate is pulling out of the fasteners
5 going into this concrete. So the forces that would have been
6 involved, the decision was made just to add the auxiliary rails in
7 there too to sort of spread out the overall forces so we didn't
8 have any failures of the fasteners. And that's how that design
9 evolved.

10 Normally we like them on the running rails, if the running
11 rails can do it. It's a simple way to do it. It's already there.
12 And as long as they can withstand the longitudinal forces and the
13 uplift forces, it's a very simple installation.

14 In cases where the rail fixation is possibly too weak to hold
15 an impact in that case, then we would add or we recommend adding
16 auxiliary rails or things of that nature to kind of spread out the
17 overall impact there and work with it that way.

18 Q. Okay. So pretty much the design is based on the parameter
19 that the estimated impact speed is not going to be exceeded by too
20 much. Is there like a safety factor in that too much? As an
21 example, you have a 15-mile-an-hour bumping post, would it be able
22 to withstand an 18-mile-an-hour, or a 20-mile-an-hour impact?

23 A. I mean, the buffer stop itself would. If it's a sliding one,
24 18 -- I mean, no matter what, it's going to -- anything over that
25 rate is going to slide a little bit more. Now there are -- Rawie,

1 the designer and manufacturer of these, they do put a safety
2 (indiscernible). Normally it's about a 50 percent safety factor.
3 And that takes into account condition of the rail. Is it new
4 rail, old rail, is it rusty, is it -- you know, it's life. And
5 then there are different parameters out there that can change
6 things a little bit.

7 So they like to build in about that 50 percent factor to make
8 sure that -- they call it worst-case scenario. If it's rated for
9 10, then your rail is in bad shape or whatever the case is. They
10 know it's going to perform to that, if not exceed it. When I say
11 exceed, obviously a shorter slide distance or things of that
12 nature.

13 So that's -- they design for the worst, I guess, based on the
14 parameter. So you should see a little bit better performance, I
15 guess, in the case of slide distance or deceleration rates and
16 stuff like that in the real world. So they do build a factor into
17 it.

18 MR. GURA: Okay. I believe I don't have any further
19 questions. I'm going to pass it over to Mr. Gordon.

20 Mr. Gordon, will you please identify yourself and ask any
21 questions that you have?

22 BY MR. GORDON:

23 Q. Yes. Joe Gordon, NTSB. Scott, I appreciate the information
24 that you've given so far. And you know, very thorough answers to
25 the questions. I think -- I've been marking questions off that I

1 had written down as you're doing such a good job answering these.

2 You just spoke about your company, I guess, would send like a
3 factory rep out that could go out and analyze site conditions for
4 a carrier prior to making a recommendation for their different
5 type of bumping post?

6 A. Yes. We normally -- a lot of the times the standard, I
7 guess, would be if it was a new installation, say, a new transit
8 or an industrial application. Most of it's done with emails back
9 and forth, but there are some times the clients want us to come
10 out and look at the site conditions. And especially if it's a
11 little out of the ordinary, such as, you know, it's an oil refiner
12 and a loading rack and 5 feet away is a place you don't want to
13 park a train. A lot of times as a comfort level, we'll come out
14 and look at it.

15 There have been cases -- in the case of Chicago where
16 actually Rawie's engineers came up from Germany to look at it,
17 because that was a pretty tricky one in that it's old structure
18 underneath and a very limited space to work with. So there was a
19 lot more people involved in that. So we will do that in the
20 design of things like that.

21 And I mean, from our role, as we represent Rawie in North
22 America in the function of a sales process, I mean, in all
23 honesty, from our side of things, we want to recommend the correct
24 equipment for the situation and give our understanding and move
25 through it.

1 And the other thing we will do, once it's installed, there
2 are a lot of times where transits or industrial customers, we will
3 come out and certify the installation, make sure that the torque
4 settings are correct, and it's set to where it's supposed to be.
5 All those things, and we sign off that they've installed it
6 correctly and, therefore, it's going to operate under the
7 conditions that it was designed for.

8 Q. Okay. And once again, very, very good answer to the
9 question. I think you've marked another one off my list.

10 So yeah, the only -- and I think you have spoken this when
11 you talked about some of the different installations, and you
12 know, there's a hazardous material unloading facility beyond the
13 end of the stub track, and that would be taken into account.

14 Would that be similar to a passenger terminal where there was
15 a walkway beyond the end of the track? That would also be
16 something that was taken into consideration, an outside
17 assessment?

18 A. Yeah, absolutely. I mean, that is -- you know, the goal for
19 this type of material, obviously number one is nobody gets hurt or
20 worse. You can replace the train, you can repair a train, you can
21 patch concrete, but the whole design behind it is for the safety
22 of the public, both on the train and around the train. And that
23 is, you know, what dictates, what drives us in our
24 recommendations.

25 We will get requests to stop a 2 million pound train at 50

1 miles an hour in 8 feet. That's not going to happen. And so we
2 are -- and Rawie, more importantly, are very, very adamant in that
3 we're not going to tell you something that doesn't make any sense
4 from a safety standpoint, passenger, and an equipment standpoint,
5 and an infrastructure standpoint. We will tell you what you can
6 do and what you can't do. And then the decision-making process,
7 obviously, leaves our orbit and goes back to the client and they
8 need to either find more space, control the train at a lower
9 speed, or a combination of all of the above.

10 And this is -- some of these take 3 years, as we go around
11 and around and around. It can be quite a long process. But what
12 our recommendation would be is what we stand on in that regard.
13 We design it based on safety number one, and everything else sort
14 of trickles down from there.

15 MR. GORDON: Okay. I appreciate that. I believe that's all
16 the questions I have at this time. I will pass it on back to
17 Mr. Gura for him to move it around the room there.

18 MR. GURA: Okay, thank you, Joe. Mr. Lapre, Pete, do you
19 have any questions?

20 MR. LAPRE: Yes, I do.

21 BY MR. LAPRE:

22 Q. This is Peter Lapre. Scott, you're doing a great job. It'll
23 be a short (indiscernible) because you answered my 20 questions I
24 had already.

25 I do have a question. You had talked about the use of

1 auxiliary rails. You talked about placing friction shoes in front
2 of the post. And these additional devices could be incorporated
3 to reduce the amount of space behind of the bumping post?

4 A. Yes.

5 Q. Is there a limit to the amount of auxiliary devices that you
6 could place in front of the post and still be effective?

7 A. Your limiting factors are going to be your deceleration rate
8 that you're trying to achieve and the capability of your track
9 structure itself to withstand the longitudinal forces and the
10 uplift, obviously, at point of impact. The more friction shoes,
11 you've got to get them moving, for a lack of a better word, so
12 that uplift is going to be reflected. So those are your two main
13 limiting factors.

14 The way your track structure is like and your decelerate, you
15 want to keep this into an area -- 0.3 g's ideally, up to 0.5 g's,
16 but we shoot for 0.3. And again, to minimize danger to the
17 public, injuries, worse, both on the train and obviously off
18 around the area, platforms, things of that nature. So those are
19 your limiting factors.

20 Q. Okay. And as related to the strength of a post itself, you
21 talked about -- you talk about (indiscernible) from leaving the
22 locomotive on the rail, like a bumping post it's attached to. Is
23 there any other special consideration that should be considered
24 with regard to (indiscernible)?

25 A. No, that's basically it is your -- again, as you mentioned

1 (indiscernible) is in front. You want to overlap with the train.
2 We like a nice clean shiny rail, which doesn't last that long
3 anyways. And we see that more in industrial application. Some of
4 these sidings are a pretty (indiscernible) looking rail, which
5 does not lend to a very good smooth deceleration with friction
6 shoes. So we like a clean rail. If it's really badly pitted, we
7 will even recommend that it's changed. But that's the main thing:
8 Can your track structure handle the impact, the uplift and the
9 longitudinal; and do you have not have any joints in front of the
10 train there because that's going to be your weakest link.

11 And that's pretty much it. We will come up with -- we will
12 tell the client what these forces are, and then the track
13 engineers have got to sit down and decide can they do -- if they
14 need to reinforce, you need to add ties, and extra
15 (indiscernible). That leaves our realm.

16 We can only say this is what this is going to generate. We
17 are not going to design your track for you because we don't know
18 obviously what your site conditions and things like that. That's
19 not our place. We'll give you the tool, but you need to make sure
20 that it -- what you have on site can handle the forces involved.

21 Q. Okay. Without oversimplifying, I'll make the (indiscernible)
22 that there's somewhat of a marriage that occurs between the
23 equipment that the railroad operates and the bumping post. So
24 transit rails typically operate many different types, you know, of
25 equipment, some being locomotive, some being cab cars and stuff

1 like that.

2 With regard to the impact (indiscernible), the equipment
3 versus the bumping post, what considerations do you take
4 (indiscernible)?

5 A. We prefer to strike an anti-climber if it's equipped with
6 such. Most LRTs are. And that kind of locks everybody together
7 so we don't get situations -- I think if you go back to the '90s
8 in Baltimore at the airport there, I think they had two hits about
9 6 months apart and it drove the trains up in the ceiling, I think,
10 of the underground there. Engage the anti-climber because, if
11 your buffer stop -- we use a guide (indiscernible) that holds it
12 down on the rail from the uplift. They lock the train and it
13 keeps it from rearing up. So we like to hit anti-climbers. We
14 don't like to hit couplers. In cases of Class 1's and freights,
15 obviously couplers are the only game in town, but it's obviously
16 not a revenue passenger situation, so it's probably less likely.

17 But we like anti-climbers. We always recommend saying, you
18 know, we want to contact the anti-climber; we get a drawing of the
19 train, we design the anti-climber to mesh with the trains. And so
20 the two of them lock in at that point of impact, and so as it's
21 pushing it along or moving the hydraulic, you kind of keep them
22 together as long as possible to keep things from wandering off the
23 track or derailling or rearing up, anything of that nature. So
24 that's what we like to see, anti-climbers. We like those a lot.

25 Q. Okay. So you could have a bumping post with a rather large

1 (indiscernible) for lack of a better description?

2 A. Yeah. We have trains that'll have two anti-climber plates on
3 either side, with a coupler in the center. Obviously, you'll have
4 two impact points if you hit the anti-climbers. And then you've
5 got a cutout where the coupler would go in there and not have an
6 impact hit.

7 We can design, and have designed, pretty much everything out
8 there. Toronto Transit up here, they are in the process of
9 introducing new trains into their system which are significantly
10 different on the front end. So we have strike faces on the buffer
11 stops that actually will handle old and new trains, depending on
12 how far couplers stick out or anti-climbers. For Rawie, I think
13 they've done over 45,000 buffer stops around the world. There's
14 nothing they haven't seen.

15 So you can allow for that and engineer if you've got the
16 drawings. And again, pick your points. You want to find the
17 strongest point of the car, which it usually is where the anti-
18 climbers are attached to, and use that as your impact zone.

19 Q. And I guess lastly, would you recommend that whenever a
20 railroad buys a new car or a locomotive, that that piece of
21 equipment be taken -- the differences in that piece of equipment
22 be taken into consideration with the design of the bumping post?

23 A. I would say so. If it's available, it is a good idea.
24 Because again, you want to lock that train with the buffer stop as
25 it's going through its motions, and keep it from jumping up with

1 the uplift, because then you do run the risk of it leaving the
2 track, which obviously creates more situations than you
3 necessarily want in that case. So if the option is there,
4 absolutely, anti-climbers are a nice way to go.

5 Q. Okay. Thank you very much.

6 A. No problem.

7 MR. LAPRE: That's good for me, Cy.

8 MR. GURA: Okay, Pete. Thank you.

9 From the Volpe Center, who wants to speak first?

10 BY MR. TYRELL:

11 Q. I guess I'll speak briefly. This is Dave Tyrell. And I
12 think the only real question -- I mean, we've gotten a lot of good
13 questions. The only real question I have is in terms of you said
14 the bump stops were open designed on the order of 50 percent?

15 A. Yes.

16 Q. Is that for speed or for energy?

17 A. It's for the energy. What they'll -- if you look at -- in
18 the case, say, of friction buffer stop, each friction shoe handles
19 40 kilojoules. So it's a math problem; obviously it's physics,
20 because you've got the speed and the weight and all those good
21 things. You divide it all out and that's where you get your slide
22 distance. And Rawie has built in there about a 50 percent factor.
23 If you have a case where, again, you're in a hazardous area. It
24 could be a platform with, you know, pedestrians or an oil
25 refinery, they will sometimes go beyond that as well for obvious

1 reasons. So that's kind of the standard, is the 50 percent
2 they'll build into it. And --

3 Q. Okay. Thank you.

4 A. And that'll dictate the number of friction shoes or the size
5 of the hydraulic or the combination of the two.

6 Q. Okay. Yeah. Again, that makes sense. But you know, in
7 terms of the physics, if it's able to absorb 50 percent more
8 energy, that ends up being a little less than 25 percent more
9 speed (indiscernible).

10 A. Um-hum.

11 MR. TYRELL: Okay. Okay. That was the only clarification I
12 was looking for. John?

13 MR. ESHRAGHI: No. All my questions are answered.

14 MR. TYRELL: Yes. So I think we're good here. Thank you.

15 MR. WORDTMANN: Okay, no problem.

16 MR. GURA: Well, I don't have any further questions. Does
17 anyone else have any further questions?

18 Okay. Well with that said, Scott, earlier you sent me some
19 pictures. Would you mind if I added those pictures along with the
20 interview transcript as examples of bumping posts and stuff of
21 that nature?

22 MR. WORDTMANN: Not a problem at all.

23 MR. GURA: Okay.

24 MR. WORDTMANN: A lot of those are on our website, or
25 Rawie's, and you're free to use those in any way you need to.

1 MR. GURA: Okay. Well, it's -- looks like we've been on the
2 interview for about 43 minutes. So with that, I'd like to
3 conclude this interview. And Scott, thank you for -- thank you
4 very much. I mean, it was very informative and I appreciate your
5 time.

6 MR. WORDTMANN: Oh, my pleasure. Any questions or anything
7 of that nature, please feel free to get a hold of us. And we can
8 help you out as best we can.

9 MR. GURA: Okay. Well, what my plan is now, I will get this
10 interview transcribed, and it usually takes about 20 days. And I
11 will send it to you via email for you to review, to make sure
12 everything is correct as you can remember. And then once it is, I
13 will enter it into the docket, along with the pictures that you
14 supplied. And it will be -- your statements I know will be used
15 in our reports. I can tell you that already.

16 MR. WORDTMANN: Okay. That's no problem.

17 MR. GURA: Okay. Again, thank you very much. And with this,
18 I'm going to hang up and take care everybody.

19 UNIDENTIFIED SPEAKER: Thank you very much.

20 MR. WORDTMANN: All right. Bye-bye.

21 (Whereupon, the interview was concluded.)
22
23
24
25

CERTIFICATE

This is to certify that the attached proceeding before the

NATIONAL TRANSPORTATION SAFETY BOARD

IN THE MATTER OF: NEW JERSEY TRANSIT TRAIN #1614
 ACCIDENT AT HOBOKEN TERMINAL
 AT HOBOKEN, NEW JERSEY
 ON SEPTEMBER 29, 2016
 Interview of Scott Wordtmann

DOCKET NUMBER: DCA16MR011

PLACE: Via Telephone

DATE: February 23, 2017

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.

Katie Leach
Transcriber