The Roundtable met in the NTSB Board Room and Conference Center, 490 L'Enfant Plaza East, SW, Washington, DC, at 9:00 a.m., Robert Sumwalt, NTSB Member, presiding.
PRESENT

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ANDREAS AEPPLI, Cambridge Systematics
KARL ALEXY, Federal Railroad Administration
ANDY ASH, Railway Association of Canada
WILLIAM BATES, SMART Transportation Division
ROB BENEDICT, Pipeline and Hazardous Materials Safety Administration
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KELLY DAVIS, Renewable Fuels Association
KENNETH DORSEY, Association of American Railroads
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ADRIAN MORGAN, GBW Railcar Services
KEVIN NEELS, The Brattle Group
GREG SAXTON, Greenbrier Companies, Inc.
PAUL STANCIL, NTSB
BEN SUPKO, Pipeline and Hazardous Materials Safety Administration
JOHN VORDERBRUEGGEN, NTSB
DAVID WILLAUER, Cambridge Systematics
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MEMBER SUMWALT: Well, good morning and welcome to the NTSB. I'm Robert Sumwalt and as a member of the NTSB it's my pleasure to welcome you to this roundtable on rail tank car safety. Thank you for being here. Also joining us this morning, I'd like to introduce the members of the team who planned and organized this event.

We've got Nicholas Worrell, who is the Chief of the NTSB Safety Advocacy Division, Paul Stancil, Senior Hazardous Materials Accident Investigator, Rachael Gunaratnam, Hazardous Materials Accident Investigator, and John Vorderbrueggen, who is the Chief of the NTSB's Hazardous Materials and Pipelines Investigations Division.

So why are we here? Well, as we all know, a few years ago North American began producing enormous amounts of ethanol, crude oil, and crude oil -- ethanol, and then the crude oil production skyrocketed, and that's the good news. Ethanol needed to be transported to and from diverse locations across the continent, and crude oil had to be moved from new points of origin to distant refineries along routes where traditional pipeline infrastructure did not
The railroads stepped into the resulting transportation gap, rapidly transforming themselves into rolling pipelines. Well, thousands of DOT-111 general purpose tank cars were pressed into service to meet industry demand to transport these flammable liquids. However, major train derailments involving the DOT-111 tank cars have demonstrated that this tank car is prone to catastrophic breach during derailment. Well, the transportation gap was solved, but a safety gap emerged. Well, naturally, with the exponential growth in shipping flammable liquids, there comes a corresponding increase in risk. To mitigate these risks, we need a holistic approach.

First, we need to keep the trains on the track. We need to keep them from derailing, but if a derailment does occur, we need to contain the liquid in the tank car. And finally, if there is a derailment and spill, we need adequate emergency response.

While each of these elements is critical to improving rail tank car safety, today's roundtable will only focus on the second of these elements, keeping the flammable liquids from spilling by using more crash-worthy tank cars. The reason we're focusing on the tank car safety today is because of the developments in
the past year.

Last May, the DOT formulated sweeping changes for the carriage of flammable liquids by rail, known as HM-251. And then in December, Congress took additional measures when they passed the Fixing America's Surface Transportation Act, or the FAST Act. The bottom-line is, is that the DOT rule and the FAST Act call for a phase out of the DOT-111 tank cars, including a slightly improved version of the 111 known as the CPC-1232 cars when used in transporting flammable liquids.

The new cars must be placed with a newly designed, more robust tank car, the DOT-117. The phase in deadline for replacing the less robust tank cars extends more than 13 years, from 2018, to 2025 for crude and ethanol, and to 2029 for all other Class-III flammables. Today, we plan to discuss the industry's progress towards meeting those deadlines.

Now, in the past decade, there have been 28 significant accidents in the US and Canada involving flammable liquids transported by rail, in which nearly 5 million gallons of crude oil and ethanol have spilled. In each of these accidents, legacy DOT-111s, or CPC-1232 tank cars, were used to transport these flammable liquids. Included in this figure is the
tragedy that occurred three years ago at Lac-Megantic, Ontario, or Quebec, excuse me, in which claimed 47 lives and literally leveled a town center.

We appreciate the opportunity to have assisted the Transportation Safety Board of Canada, or the TSB, with their investigation of this tragedy.

Thank you. And following that accident, the TSB and the NTSB issued several coordinated safety recommendations to mitigate the effects of such disasters.

Transporting flammable liquids by rail is a problem that will not get any better until the general purpose tank cars are replaced or retrofitted to the new standards. One goal of the roundtable is to create a sense of urgency to complete this tank car replacement, or retrofit, as soon as possible.

The government-mandated deadlines are just that, they're deadlines, but that doesn't mean that we have to wait until those deadlines to complete these vital safety enhancements. Quite honestly, we face an unacceptable risk until this effort is completed. Just do the math. If past performance is any indication of future performance, we're looking at about nearly three accidents each year in the US and Canada where tank cars derail, they breach, we have a significant fire,
or explosion, or leakage into our waterways, our
nation's treasures, so there is a sense of urgency.

But we all know that the devils in the
details, so together -- so today, we have gathered many
of the key players in the industry. We want to know
what those details are. We want everyone at the table
to share your perspectives, share your challenges, and
listen to the viewpoints of others, and that's really
the purpose of this roundtable, to facilitate a
conversation about issues that are critical to ensuring
timely implementation of the new safety standards and
getting the legacy tank cars out of the flammable
liquid service as soon as possible.

So we've structured today's gathering to
encourage a true flow of information and ideas among
the invited participants, the oil and ethanol shippers,
the tank car manufacturers and retrofitters, fleet
owners, the railroads, the research community, and
regulators. Regardless of your affiliation, I know
that everybody in this room is a safety advocate and a
safety expert.

And we've worked with many of you in the
past in accident investigations. We've asked for your
expertise in those situations, and today, we're calling
on your expertise once again.
As Rachael will explain in a few minutes, we will have five discussion topics, each lasting about 45 minutes. I'll facilitate the conversation and that's really exactly what I'd like for it to be. I'd like for this to be a conversation. I'll toss out the questions and I hope that you will chime in with your thoughts. Let's have an open, candid dialog.

In addition to questions that we have developed here at the NTSB, we'll take questions from the audience, those assembled here in the boardroom and those watching via webcast. We'll pass out index cards for those of you in the boardroom, and for those of you watching online, you may submit your questions to this address, which Diedre has placed up there, railtankcarsafety@ntsb.gov.

Remember, if you are submitting questions, and we would love to get your questions, but if you are submitting questions, please remember to keep your questions on the topic of tank cars, not other aspects of rail safety, such as train routing or positive train control. Those are all very important topics, but it's not the scope of this roundtable.

In truth, I know that we all share a common goal, safer transport of flammable liquids by rail. We're hoping that by understanding the hurdles to tank
car replacement and retrofit, we can better, quickly
achieve that goal. I'll now turn it over to Rachael
Gunaratnam to summarize important safety information,
to go through a few housekeeping items, and begin the
discussion. Rachael?

MS. GUNARATNAM: Thank you, Member Sumwalt.
For safety purposes, please note the nearest emergency
exits. There's two right here in the front stage and
also one in the back. And you probably notice we only
have one escalator, so please take care when you're
going back and forth on that escalator.

Also, we're expected to have a fire drill at
10:00 a.m. Please ignore that. Normally we don't, but
we won't be doing that here. And also, if you have not
done so, please silence your electronic devices.

I would first like to start by thanking our
panelists and audience members for joining us today for
an important discussion on rail tank car safety. I
would like to open this discussion to explain why we
are here today. As Member Sumwalt mentioned, the NTSB
identified 28 significant rail accidents involving
flammable materials in the last ten years, ten of which
NTSB investigated.

These accidents have led to the evacuation
of hundreds of people and released over 4.6 million
gallons of materials into the environment. Featured here are some recent accidents that have involved unit trains of flammable materials. We continue to investigate these type of accidents and currently have three open investigations.

In the past year, the NTSB has investigated a crude oil accident in Heimdal, North Dakota and an ethanol accident in Lesterville, South Dakota. From these investigations, the NTSB has identified major safety issues that include railroad operation, such as flammable liquid route selection and track integrity, and shipper responsibility, such as proper classification of flammable materials, emergency response planning and capability, and training, and DOT-111 and CPC-1232 crash worthiness.

However, for the purpose of this roundtable, the discussion will focus on the progress and outlook for replacing and retrofitting the existing fleet of DOT-111 and CPC-1232 tank cars with the new specification DOT-117 tank car that includes puncture and thermal resistance and fitting protection, all of which is intended to provide improved crash worthiness and accidents.

The NTSB has issued a number of recommendations to the Pipeline and Hazardous Material
Safety Administration, PHMSA, to improve the crash
worthiness of the tank cars used to ship all flammable
liquids. Summarized here are recommendations that call
for enhanced head and shell puncture resistance,
redesign of the bottom outlet valves to remain closed
during an accident, thermal protection for tank cars
transporting flammable liquids, and appropriately-sized
pressure relief devices to optimize performance under
fire conditions.

In addition to these recommendations, the
NTSB has made rail tank car safety a priority in its
mission. Every year, the NTSB announces its most
wanted list to the public, listing its top safety
issues in all transportation modes. The 2015 most
wanted list included rail tank car safety.

The focus was to require a stronger tank car
with better accident performance that reduces the
probability of releases. During 2015, PHMSA issued a
new regulation and Congress passed the FAST Act, both
requiring a stronger, more robust tank car for
flammable liquid service.

The May 8, 2015 PHMSA regulation, HM-251,
titled, Enhanced Tank Car Standards and Operational
Controls for High Hazard Flammable Trains, required a
new, more robust tank car for certain trains carrying
crude oil and ethanol. The FAST Act, enacted in December 2015, supplemented some of the requirements of the PHMSA regulation.

Among its many mandates, the FAST Act requires tank cars meeting specification DOT-117 for all flammable liquids. The Act also requires the use of ceramic blankets for thermal protection and top fittings protection for all retrofitted tank cars.

The NTSB continues to promote tank car safety in an effort to ensure timely implementation of these new safety measures and has kept it on this year's most wanted list. The new specification DOT-117 tank car requires a full head shield and thicker tank shell for puncture resistant, a tank jacket and thermal -- I'm sorry, can we go back to Slide 8?

All right. I believe we also have the slides in front of you. Unfortunately, the webcast will not be able to see the slide show. So if you could turn to Slide 8, so the new specification DOT-117 tank car will include a full head shield and thicker tank shell for puncture resistance, a tank jacket and thermal protection for fire resistance, and top fittings protection and a redesigned operating handle on the bottom outlet valve to protect against releases in an accident.
The FAST Act also requires a phase out retrofit schedule for tank cars in flammable liquid service. It is organized by tank car type and commodity being transported. Crude oil tank cars are first to be addressed, then ethanol, and finally, all other flammable liquids. In the chart that you see before you, there's crude oil shipped in CPC-1232 jacketed tank cars that have recently been seen in rail accidents can be used without alteration until May 1, 2025.

The NTSB also issued two recommendations urging PHMSA to develop an implementation schedule with intermediate milestones and public reporting. These recommendations are intended to encourage the prompt replacements and retrofits of the existing DOT-111 tank car fleet with the new specification DOT-117 tank car.

However, to date, PHMSA has not published milestones that would encourage timely implementation of fleet upgrades and replacements. These intermediate reporting mechanisms are important to know industry's progress in complying with the FAST Act schedule, especially in light of current energy market conditions.

Data from the Energy Information Administration shows that the number of crude by rail
shipments have significantly declined over the past 12 months. However, total U.S. crude oil production has dropped only slightly since its peak in 2015.

In comparison, EIA data shows that ethanol production in shipments have remained relatively steady over the past five years. This leads to questions of how current energy market conditions are influencing tank car utilization. This includes the continuing use of the DOT-111 tank car and the status of retrofitting and replacing them with the new specification DOT-117.

And now I would like to introduce Manuel Kotchounian with the Transportation Safety Board of Canada.

MR. KOTCHOUNIAN: Thank you, Rachael. Shortly after Lac-Megantic three years ago, the TSB issued a series of recommendations, which included one calling on the regulators to improve the robustness of the DOT-111 tank cars. Since then, we investigate four accidents involving flammable liquids in DOT-111 tank cars, including the two Gogama, Ontario derailments.

These accidents further highlight the risks posed by the DOT-111 tank cars. In these accidents, over 70 CPC-1232 cars carrying flammable liquid derailed, including less than ten that were jacketed and insulated. A tank car damage assessment and
performance review was conducted by the TSB lab, in particular, the performance of the jacketed CPC-1232 cars was compared to the non-jacketed cars in these accidents.

While the board's findings have not yet been communicated, field observations suggest that although jackets are known to generally help tank car crash survivability, any additional impact resistance afforded by the jacket did not prevent shell punctures for the conditions the prevailed in these accidents.

And there was insufficient data to establish whether the jacketed and insulated CPC-1232 cars had better fire survivability than the non-jacketed cars. The investigation's reports are expected in the coming month and will include all the details. Rachael.

MS. GUNARATNAM: Thank you, Manuel. Our discussion for today will cover the following five topics; Topic 1, DOT-111 and CPC-1232 retrofit phase out schedule, monitoring and compliance; Topic 2, tank car manufacturing and leasing outlook; Topic 3, tank car shop retrofit logistics and capacity; Topic 4, factors influencing tank car owner decisions to purchase new DOT-117 tank cars and retrofit or retire their existing fleets; Topic 5, path forward to implement the new tank car safety standards.
Member Sumwalt, this concludes our presentation.

MEMBER SUMWALT: Rachael, thank you. Sorry your presentation was interrupted, but that was still a great job. I'd like to turn it over to Paul Stancil, who has an announcement concerning a couple of NTSB safety recommendations.

MR. STANCIL: Thank you, Member Sumwalt. Yesterday, we notified PHMSA by letter that we are closing safety recommendations, R-12-5 and R-12-6, which were issued as a result of our investigation of the June 2009 derailment in Cherry Valley, Illinois. The recommendations that Rachael discussed, and these two recommendations in particular, called for tank car puncture resistance, top fittings and bottom fittings protection, and cited the unacceptable crash worthiness of general service tank cars.

With respect to those issues, our response letter commends PHMSA's regulatory actions, specifically as modified by the FAST Act, new specification 117 cars or retrofits are required for all tank cars carrying flammable liquids, regardless of train makeup, and not only for ethanol or crude oil impacting groups 1 and 2, as we had called for in the recommendation.
Ms. Gunaratnam just described the features of the new tank car specifications that address these safety issues and these safety recommendations, and so we have classified them yesterday as closed with acceptable action.

There are two other recommendations that we issued following our investigation of the Mount Carbon, West Virginia accident. Those were R-15-14 and R-15-15. Those recommendations call for thermal protection systems for existing tank cars, all existing tank cars, transporting Class-III flammable liquids, and also appropriately-sized pressure relief devices to minimize the likelihood of energetic thermal ruptures and accidents.

We urged PHMSA to issue thermal protection regulations in accordance with the FAST Act that would require thermal blankets capable of providing protection from pool fires and torch fires that significantly exceed the current performance standards in the hazardous materials regulations, and pending issuance of final rules that PHMSA is drafting in accordance with the FAST Act, these safety recommendations are now classified open with an acceptable response. Member Sumwalt, that's all I have.
MEMBER SUMWALT: Wonderful. I think that's a real success story that we've been able to close out a couple of those recommendations, so congratulations, PHMSA, on those, so thank you. There you are. Well, why don't we start out by going around the room and introducing yourself, and I'll just pass the mic, and welcome. Hal, welcome from Oregon.

MR. GARD: Hi. I'm Hail Gard. I'm the Rail and Public Transit Administrator for the Oregon Department of Transportation.

MR. MAJORS: Good morning. My name is Leonard Majors. I'm with the Pipeline Hazardous Materials Safety Administration.

MR. SUPKO: Hi. My name is Ben Supko. I'm also with PHMSA, the Hazardous Materials Regulations Division.

MR. BENEDICT: Hello. Good morning. My name is Rob Benedict. I'm also with PHMSA and I'm with the Risk Data and Program Management Division that does the regulatory analysis for PHMSA.

MR. ALEXY: Good morning. Carl Alexy, Federal Railroad Administration, Office of Safety.

MR. DORSEY: Ken Dorsey, Association of American Railroads.

MR. FRONCZAK: Robert Fronczak, Assistant
Vice President Environment and Hazardous Materials with the Association of American Railroads.

MR. ASH: Andy Ash, Director, Dangerous Goods, Railway Association of Canada.

MR. JAJA: Denford Jaja with Hess Corporation.

MR. CLAYPOOL: Good morning, Gabe Claypool, President and COO for Dakota Plains Holdings.

MS. DAVIS: I'm Kelly Davis, Director of Regulatory Affairs for the Renewable Fuels Association.

MR. MORGAN: Adrian Morgan, GBW Railcar Services, Quality Assurance.

MR. JOHNSON: Good morning. I'm Greg Johnson, Vice President of Equipment with Wells Fargo Rail.

MR. AEPPLI: Good morning. I'm Andreas Aeppli with Cambridge Systematics.

MR. WILLAUER: David Willauer, also with Cambridge Systematics, and I chair the TRB's subcommittee on crude oil transportation.

MR. SAXTON: Good morning. I'm Greg Saxton, Chief Engineer for the Greenbrier Companies.

MR. HULICK: Good morning. I'm Robert Hulick with Trinity Rail out of Dallas, Texas, also a member of the Railway Supply Institute.
MR. BYRNE: Good morning. I'm John Byrne, Vice Chairman of the Tank Car Committee RSI, Railway Supply Institute.

MR. KLOSTER: Dick Kloster, Senior Vice President of Alltranstek. We manage of 100,000 tank cars for car owners and provide technical, operational, and strategic consulting for, primarily, tank cars.

DR. NEELS: Kevin Neels with the Brattle Group.

MR. BATES: I'm William Bates. I'm with the Small Transportation Division District of Columbia, Legislative Director.

MR. KOTCHOUNIAN: I'm Manuel Kotchounian with the Canadian Transportation Safety Board.

MR. VORDERBRUEGGEN: Good morning. I'm John Vorderbrueggen, Chief, Pipeline and Hazardous Materials Investigations with NTSB.

MS. GUNARATNAM: Rachael Gunaratnam, Hazmat Accident Investigator, NTSB.

MR. STANCIL: Paul Stancil, Hazard Materials Accident Investigator, NTSB.

MEMBER SUMWALT: Thank you all and welcome. And again, I'm Robert Sumwalt, I'll be moderating this, and really, you are the stars of this, and I think by going around the room, we were able to see that we
really do have an all-star group assembled today. So
we'll go ahead and start the clock, and not quite
ready? Well, anyway, let's -- the first topic that we
will cover is the DOT-111 and CPC-1232 retrofit and
phase out schedule, and monitoring and compliance of
that schedule.

We want a progress report on the status of
the fleet, of the tank car fleets, used to transport
flammable liquids. And I think just to get everybody
on the same page, if it's all right with you, when I
refer to the legacy DOT-111s, when I say that the
legacy 111s, I'm referring to that, the 111 cars that
were constructed prior to October the 1st of 2011.
When I say the 1232s, I'm referring to the CPC-1232s,
and of course, the 117s, referring to the DOT-117s. Is
that -- Robert, Bob, am I fairly accurate there?
Great. Perfect.

I've been struggling with that for a while.
So what I'd like to do is, Rachael mentioned this, but
we were having audio/visual difficulties at the time,
Ben and Karl, if you would, we've got the slide up
here, just detail for us once again what those new
standards are for the 117 car. So really, I think the
HM-251, it really was a joint effort between PHMSA and
Karl, and FRA, so we have it -- well, thanks. Jump in
there.

MR. SUPKO: All right. This is Ben Supko. Yes, as was mentioned, you know, the first key step to the DOT-117 was the increase in the thickness of the shell to 9/16 of an inch. We also required a full height head shield, 1/2-inch head shield, on the tank car, and then we added thermal protection, and with the thermal protection came an 11-gauge jacket.

We also added enhanced top fitting protections and also the bottom outlet valve protection, or removing the handle to ensure that doesn't open during an accident situation. So, you know, that's the basics. Obviously, every tank car can be enhanced in a similar way, but this would be your baseline standard for the DOT-117.

MEMBER SUMWALT: Great. And so, Karl, what safety benefits do we anticipate from these enhancements?

MR. ALEXY: Well, I think, let's see, going down the list, as we talk about the thicker shell, better material, TC-128, we're hoping for improved survivability of that, being puncture resistance in the tank car. A thermal protection system, really, what we were looking for with that was a system that would achieve the performance standard that's in the
regulations of 100 minutes in a pool fire to give first
responders an opportunity to get in, evaluate, and
evacuate as needed.

So that system in place is for that reason. The head shield is, you know, again, for additional
puncture resistance. You know, the bottom outlet valve
is interesting. You know, we find that, you know, we
have skid protection, the ARR already has standards for
skid protection. That seems to really work out pretty
well. In a couple of these incidents we've seen where
the valve, or the handle, did not disengage, or it was
engaged and opened up.

And then there's some instances where there
was nothing we could do, where the valve actually
sheared off just because it was just unlucky, so that
was a tough one; tough to overcome. And top fittings
protection, you know, what we see, often, the damage is
so extensive, the puncture, and so much material is
lost, we didn't look at the top fittings, because not
much was lost out of that because of the puncture, but
now that we've improved the puncture resistance, top
fittings becomes a little bit more critical to prevent
that type of damage.

MEMBER SUMWALT: Right. And as I understand
it, the top fitting protection enhancements was not an
HM-251, but they were mandated in the FAST Act, is that right?

DR. WILSON: It was required for new cars. So for the DOT-117's retrofit, that it didn't work out as far as the cost benefit analysis for the retrofits.

MEMBER SUMWALT: Great. So on the retrofits, it wasn't required in HM-251, however, the FAST Act did come in and require the retrofits to have the new top fittings, is that right, Ben?

MR. SUPKO: That's absolutely correct.

MEMBER SUMWALT: Great. So let's just go through this. So we're talking about 9/16 tank material, so that -- from the shell, and that has increased from, depending on the type of steel, anywhere from, 7/16 to 8/16, which is a 1/2-inch, of course, or now it's up to 9/16, is that correct? And so it's -- great.

Now, Karl, you mentioned thermal protection, and I hear a couple terms tossed around. I hear thermal insulation and I hear thermal protection, so outline for us the differences in each of those.

MR. ALEXY: SO insulation on certain cars, you know, that's a specification requirement, and that's really intended to keep materials warm or cold, so those materials that are loaded hot, you want to
keep it hot, you put insulation or, you know, you don't want it to overheat. Thermal protection is intended to prevent major losses from a tank car, except for through the pressure relief device, in exposure to pool fire conditions.

MEMBER SUMWALT: Let me ask you this, when the 117s start being built, are there DOT-117 tank cars that do not have thermal blankets?

MR. ALEXY: I'd have to defer to the builders, but I believe that they're all being equipped with the ceramic fiber blankets.

MR. BYRNE: Yes, the new 117 cars are being built with thermal protection; thermal blankets.

MEMBER SUMWALT: With thermal blankets. And basically, I think that's about 1/2-inch ceramic layer around the shell?

MR. BYRNE: Yes, around the tank.

MEMBER SUMWALT: Robert, did you want to comment on that?

MR. HULICK: Yes, and all the car -- every DOT-117 has a jacket and a ceramic fiber blanket as constructed. There are some of those cars that also have the insulation that Karl mentioned, which is for temperature control of the product being transported.

MEMBER SUMWALT: Great. So the 117s, they
have 9/16 shell, they have 11-gauge, which is about 3mm, jacket, they have thermal protection, which is a 1/2-inch ceramic blanket around the shell.


MEMBER SUMWALT: Blanket. 1/2-inch head shields, full-height head shields, better bottom outlet protection to keep the handle, and I think in Cherry Valley, we saw where, and in other accidents, we've seen where the bottom outlet valve has opened up and then better top fittings. Is that the --

MR. HULICK: I might add to that, you know, the handle, the new requirement is for what we call a positive-engagement handle. So you have to physically engage the handle before it will operate the valve. In prior applications, the handle would be attached to the valve, and in some circumstances, under derailments, the handle was turned and inadvertently opened the valve, so that's the key difference is, you have to physically engage to operate the handle.

MEMBER SUMWALT: Fantastic. Thank you.

Now, Bob, let's go to you for the AAR, and I know that you prepared some slides and the slides are in the packet, so I'm going to turn to you and for those of you watching, we're going to project a couple of the
slides that I think you wanted up there, even though we've not asked for presentations, I think some of these graphs might be beneficial.

So what I'd like for you to do is outline the tank car, the tank car fleet, what it currently looks like for those cars carrying flammable liquids, for the non-pressure tank car fleet. So basically, give us an idea of how many legacy 111s are out there, how many 1232s are still in service in flammable liquids, and what the 117 fleet is looking like, including the 117Rs, which, the 117Rs are those -- the 1232s that have been retrofitted, I believe, to meet the current 117 standards, is that true?

MR. FRONCZAK: Yes. And if I could, I would like to explain the philosophy behind the implementation deadlines in the FAST Act, because industry felt very strongly that we should address the things that are being transported in the highest quantity first, so that was crude oil, wanted to address materials shipped in the least crash-worthy container, so address the non-jacketed 111s first, jacketed 111s second, non-jacket CPC-1232s third, and then the jacketed CPC-1232s.

So we went crude oil, the largest flammable liquid, again, shipped in unit trains, or very large...
blocks, so that was what we wanted to address first, ethanol was second, and again, those are shipped in, sometimes, unit trains, but also very large blocks, and then third, we wanted to address the other flammable liquids, which are shipped in small blocks, or onesies, twosies, so the risk associated with those commodities, in our opinion, was a lot less.

The DOT-111 has the highest conditional probability of release in an accident, followed by the non-jacketed DOT -- or jacketed 111, followed by the non-jacketed CPC-1232, followed by the jacketed CPC-1232, and then the 117 has an 85 percent reduction in risk over the non-jacketed 111, so we're getting a significant improvement in safety with the DOT-117; new 117.

If you look at this first slide, and I see that it's no longer up there, here you go, there has been a significant reduction in the number of DOT-111 tank cars transporting crude oil, nearly 97 percent reduction in the number of DOT-111s, so we've gone from over 18,000 111s in 2013, non-jacketed, to just 576, so the industry has really stepped up to that first deadline and reduced the risk of the transportation of crude oil.

Same thing with jacketed 111s, we've gone
from 3200-plus to 132, so there's only 708 DOT-111s right now transporting crude oil. Going to the ethanol slide, is next, if you look at ethanol, there hasn't been a big change in that fleet, but you would expect that, given that the deadlines for converting those cars are a lot further off in the distance.

And then the third slide -- okay, we're going to the tables now, I see.

MEMBER SUMWALT: Yes. So really, I think it's Slide 11, I believe it is, Bob, that you want next. I think.

MR. FRONCZAK: Yes, I wanted to go to the actual line diagrams if we could, but again, with the other flammable liquids, there hasn't been a whole heck of a lot of change in that fleet, but again, those are the cars that are way down into the, you know, 2025 to 2029 timeframe, and those will be the last converted, so, you know, based on what I see today, I think that the industry has a pretty good opportunity to meet the deadlines in the FAST Act.

Now, if you look at the number of tank cars meeting the DOT-117 spec, and these are cars as of June 30 of this year, there are 8573 DOT-117s and 980 117Rs that are currently in service, so these cars are currently in service, and then there's another 916 117s
and 47 117Rs that are pre-registered in number, so that means there's commitments to buy those cars.

The builders have registered them in number, they just haven't made a move yet. And there's also some cars, 120 200W cars, these are pressure cars that shippers are intending to use for flammable liquid service, that have also been constructed, and those cars are capable of being non-pressure and pressure, basically, so it gives a shipper more flexibility.

So there has been a pretty large movement towards the 117 cars. Does that answer the questions?

MEMBER SUMWALT: Very thoroughly, and thank you, and thanks. So you mentioned conditional probability of release, just real quickly, what is that and how do you go about computing that?

MR. FRONCZAK: That's a very good question. The AAR and the Railway Supply Institute are partner on a project called The Tank Car Safety Research and Test Project. That project has been in place since the 1970s. We have, I think, over 43,000, 44,000 tank cars that have been damaged in derailments since that time, so we understand very well how cars perform in accidents based on the features of those cars.

So if we know the shell thickness, whether it's got a jacket, a head shield, a bottom outlet
protection, top fittings protection, we have a very
good understanding of how cars perform in accidents, so
that's where we get those conditional probability
release numbers.

MEMBER SUMWALT: Great. Thanks. And you
mentioned that 97 percent -- there's been a 97 percent
reduction in the number of 111s making at least one
shipment of crude. What's the ethanol business looking
like in terms of that?

MR. FRONCZAK: Oh, the ethanol business has
made very little progress in non-jacketed 111s, but
again, if you look at the deadlines for ethanol,
there's still plenty of time to get to that fleet. I
think the key is, is that, what we're seeing is the
highest risk product, crude oil, is seeing a
significant reduction in the number of DOT-111 tank
cars.

MEMBER SUMWALT: Well, let me ask you that,
you mentioned the highest risk product, crude oil, but
figures that I've seen, and I think it was an FRA paper
that said that that ethanol is actually a higher hazard
product. What's the deal on that? Karl?

MR. ALEXY: I can touch on that. You know,
risk, when we talk about risk, you know, it's
probability times consequence times vulnerability. You
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know, it's true when, you know, crude oil was at its peak, you know, just because there was so much of it moving it was the highest risk. We've seen a drop off. So, you know, maybe that risk calculation changes.

Back when, you know, we look at some accidents that had happened prior to, or just after, Lac-Megantic, and we went back and looked through the record, and we found that cars that were involved, and these are DOT-111s, in carrying ethanol and crude oil had a similar number of cars that were punctured, similar number of cars that had high-energy thermal events. Actually, I should take that back, they had the same number of punctures, but all the high-energy thermal events were -- when I say, high energy, I'm talking about when the car was actually broken into pieces, so there were multiple pieces of that car afterwards, they all occurred in ethanol service.

So just based on that information alone, you know, we have a number of these cars that open up in thermal tears that ended up in fireballs. And, you know, we've seen that in crude oil and in ethanol service, but again, the real high-energy events, where the car was fractured, occurred in ethanol service.

MEMBER SUMWALT: Yes, and it was actually, I'm looking at a paper, a white paper that you
authored, that indicated just that, the data suggests that denatured alcohol may pose a greater risk of explosion than crude oil. So, Bob, how does that square with what you just said?

MR. FRONCZAK: Well, I think that it does fit together. I think the key difference between crude oil and ethanol is the fact that crude oil is transported in unit trains, to a large degree, so the probability of a whole bunch of cars being all together in a derailment, and if you have one puncture and a fire, I mean, you can involve multiple cars in a pool fire and have thermal tears.

Ethanol is generally not shipped in unit trains. I mean, it's shipped in blocks, so our thought was is that the risk of multiple cars being in a pileup for crude oil was higher than ethanol, but Karl's right, I mean, they do respond similarly if they are -- you know, multiple cars are involved in derailments.

MEMBER SUMWALT: Well, while we're talking about this, why don't we go ahead and so percentage-wise, what percentage of the flammable liquids are transported by rail; ethanol, crude oil, and all other flammables?

MR. FRONCZAK: Yes, if you look at total number of flammable liquids, crude oil is 43 percent of...
the number of flammable liquids, and this is using 2015 as the year, ethanol is 35 percent, and other flammable liquids is 21-1/2 percent, roughly, so again, crude oil has got the highest number of shipments right now.

MEMBER SUMWALT: Okay. Let me ask you this, so to follow-up on this, so if the legacy 111s are used primarily in ethanol shipments, and the 2032 cars are used primarily for crude oil shipments, we've got a product that's being shipped in the older tank cars that is, according to Karl, really, the more flammable of those, the higher hazard of those, two products; crude oil versus ethanol.

So we've got the product that is more hazardous is being shipped in the older tank cars.

MR. FRONCZAK: And again, it has to do with, risk is probability times consequence, and if there are more shipments of a product, the probability is higher. So I think that, ultimately, my thought is that the risk associated with crude oil is higher because, again, it's unit train versus blocks. You know, I will defer to Karl on whether or not it is. You know, there are differences, but the key is, is that the FAST Act has crude oil first, ethanol second, and other flammable liquids third.

MEMBER SUMWALT: Who would like to jump in
and anybody who would like to talk about that particular topic? Please, John.

MR. BYRNE: Just a couple comments. You know, we talked, kind of, specifically about the removal of the DOT-111s, didn't really talk about how, you know, the fleet composition within the existing crude oil fleet has changed. And, you know, back to, you know, conditional probability of release, even though these cars aren't the end game, in terms of the 117s, they have improved the safety of the crude oil fleet, generally.

And what I'd like to highlight is, if you compare 2013, for example, the crude oil fleet, basically, approximately 37 percent of the crude oil fleet was CPC-2032 cars, where, today, Q1 2016, almost 86 percent of the cars in the crude oil fleet are the better designed CPC-1232; the cars that the industry volunteered to make before there was, in fact, a standard.

MEMBER SUMWALT: Thank you for that perspective. There's a table that Rachael, was in her presentation that was not shown, and we're going to go ahead and pull it up right now, because this shows the deadlines. We've been mentioning that there's a difference in the deadlines. And so, basically, let's
pull up that table right now.

So these are outlined in the -- is there a difference between the FAST Act and the HM-251 on the deadlines? There is. Okay. These are the FAST Act. Okay. So as you see, there's a five-year difference between the phase out for the crude oil -- well, it depends. It's pretty complex, isn't it? Yes.

But for all intents and purposes, for ethanol, the 1232 and the legacy cars, are basically the same. It's 2023. Either it's May 1st or July 1st, and so would anybody like to comment on these deadlines? I just wanted the folks in the audience to be able to look at those. David, please, jump in there, and I'll tell you what, we just got word that if you all would just grab those mics and speak into them closely, so make sure we can pick them up well, on the webcast. Please, David.

MR. WILLAUER: Well, I'm glad this issue has come up because the TRB is conducting a study right now on the domestic transportation of petroleum, crude oil, ethanol, and natural gas, and they're about halfway through the study. And at the first meeting, we had presentations from industry and government, and Kelly was kind enough to give us a picture of the ethanol distribution in the U.S.
We saw a crude oil map and an ethanol map of the distribution by rail in the U.S. And there was some remarkable similarities in that crude oil is transported throughout the U.S. because of the location of the refineries and the refineries that were looking for the Bakken crude oil, East and West Coast refineries, as opposed to Gulf Coast refineries, and then ethanol is primarily produce in the Midwest and transported to all the major urban areas around the country.

So I did find it interesting to note that while the volumes of crude oil have dropped of remarkably, mostly due to market reasons, ethanol really has not. If anything, ethanol volumes are increasing.

MEMBER SUMWALT: Great. Thanks so much. I want to move now to talk about the deadlines and how the regulators might monitor those deadlines. So, you know, as we just saw in the table, there's various deadlines. There's 2018, 2020, 2023, 2025, and finally, 2029. So they're all outlined in the FAST Act. So I'll ask PHMSA, whether it's Rob or Ben, and also -- and, Karl, maybe you can jump in there as well, how -- first of all, are there any informal milestones that have been established by the regulator to check
MR. SUPKO: Well, the first date, the January 1, 2018, right around that one, that's kind of a check of status, a check of status of where you are. Are you going to meet your dates established in HM-251? The difference now is we have the FAST Act, right? So the FAST Act, there's language in the FAST Act that supersedes all the dates in the regulation, so as we're continuing to get closer to publishing the rule that will adopt what's in the FAST Act, we have to keep that in mind.

Many of these dates are the same, or very similar, the difference would be that the HM-251 rule took an approach of focusing on HHFTs and packing group-based, kind of, risk, right? Similar thing, because much of crude oil that we're talking about is Packing Group 1, so crude oil pretty much came first in that rule as well.

The FAST Act took those deadlines and changed them to commodity-based and expanded it to all Class-III materials, not just in HHFT, so there's some differences there which, you know, that's beneficial in that you're now getting all Class-III materials into the 117s. The only thing, like I said, we had the ability to get reports under HM-251, but the bigger
gain here, also, through the FAST Act, would be that
there's, in 7308 of the FAST Act, a modification
reporting requirement that goes into play that we're
implementing right now.

MEMBER SUMWALT: Okay. So talk about that
reporting requirement and PHMSA will keep track of how
the industry is doing. Rob.

MR. BENEDICT: So the important fact to note
to being with is, there's kind of two parts of the FAST
Act reporting requirements. There's one that I view as
kind of retrospective, looking back at what's happened
in the past year as far as TC-117, new construction,
retrofits, similar to the numbers that Bob talked about
just a minute ago.

There's also a forward-looking aspect where
we'll -- and require us to engage with the retrofitting
industry as well as the Greenbriers and Trinitys of the
world to see what the projections, as far as capacity,
are for the coming year.

So PHMSA, FRA, and the Bureau of
Transportation Statistics have gotten together, we are
collaborating with AAR to get the retrospective data,
and we plan to include that with a notice to collect
information from the tank car manufacturers to get the
forward-looking data and report that on an annual
basis.

We're required to provide a report to Congress, but in addition, we plan to post that information publicly every year.

MEMBER SUMWALT: Wonderful. That's great. Now, what enforcement mechanism do you have in place if these deadlines are not met?

MR. ALEXY: I can't say that we have any particular mechanism in place yet. I mean, we're coming up on these deadlines and we've gotten these type of informal reports. You know, FRA does have a group that goes out and does audits of these facilities, and we sort of keep tabs. We're obviously not looking at production rates or anything like that, and we're getting a handle on the facilities that are out there who are actually doing these retrofits and building these cars, but, you know, like I said, we don't really have an enforcement mechanism in place right now.

MEMBER SUMWALT: Great. Thank you for that answer. So I'm going to go to AAR, and we've put Bob on the spot, maybe, Ken, you would answer this, whichever one you like, and then, Andy Ash, I want to hear your perspective from the Railway Association of Canada. What can, or what is, the AAR and Railway
Association of Canada, what are you all doing, what can you be doing, to encourage car owners to comply with the implementation dates?

For example, are you considering an industry standard/interchange rule, or other mechanism, that would refuse non-DOT-117-compliant flammable liquid tank cars in commerce?

MR. FRONCZAK: I'll take a first stab at that. I mean, those cars are illegal after those deadlines. So are members, basically, can't pick them up. And, you know, there are mechanisms in place where railroads know if, you know, a commodity is in a car that it's not suited for, they won't pick it up.

So I mean, that's what I would say and how I would answer that. I don't know if anybody wants to --

MR. ASH: From the RAC standpoint, you know, we represent 50-plus railways that operate in Canada presently. Around 24 of those are hauling dangerous goods, which does include crude oil, ethanol, and many other flammable liquids in Class-III service. As to mirror what Mr. Fronczak says, we go by, being a railway industry in Canada, the timetables that are set out, which, in Canada, are harmonious with those set out in the United States, to facilitate transport or traffic.
However, our members would be governed by the same rules by saying we could not pickup cars at shipper origins and move them in transport.

MEMBER SUMWALT: Great. Thanks. And in Topic 5, the last panel of the day, we're going to talk about future ways, innovative ways, to spur quicker compliance and see if there's any innovative ways that we can look at that, so that's really where we can talk about some of these things, but let me go back to the regulator, both PHMSA and FRA, you know, the FAST Act Section 7304 states that the DOT Secretary may extend, up to two years, the deadline for retrofitting to the 117 standards if there's insufficient retrofitting shop capability or capacity.

How do you anticipate this working and how would you determine if "insufficient retrofitting shop capacity exists"? And there's probably not going to be a problem, as long as there's a demand, there's probably not going to be a problem, because these folks are going to make sure, but we at the NTSB are sensitive to extending deadlines, so why don't you tell us a little bit about that?

MR. BENEDICT: Sure. With the FAST Act, one key distinction is the addition of all flammable liquids. So I believe, I don't want to speak for the
authors of the FAST Act, but that was put in there probably to address the concerns there. I can tell you, our secretary was very adamant about the schedule that we adopt, and we want to try to stick to that as closely as possible, and from the numbers that Bob's reporting today, it appears that, currently, you know, they're on pace.

And as far as to how we're going to measure that, that'll be rolled into this reporting requirement. We feel like, an annual basis, we'll have a good look of what's happened and what's planned to happen in the next year, and then gauge it from that.

MEMBER SUMWALT: Thank you. And as we know, the FAST Act has not been codified. The Congress has said PHMSA must, within a year, I think, develop a law, I believe, and it's probably in a rulemaking process now, which means you probably can't say anything about it, but is there anything you can tell about how that rulemaking process is coming along?

MR. SUPKO: Yes. I mean, you know, there's three key sections there that deal with HHFT issues in the FAST Act, 7304, 7305, and 7306, so you're dealing with bringing in all Class-IIIIs, implementing the timetable, the schedule, top fitting protections, and also, the thermal protection. So, you know, much of
the language in the FAST Act is either self-executing
or non-discretionary, so that's how we're approaching
this movement forward.

So, you know, we're getting very close to
getting this rule published, so it won't be very long
before you see it on the streets. Should be within,
you know, before the end of summer for sure.

MEMBER SUMWALT: Thank you. Bob, please,
sir.

MR. HULICK: Just one other point back on
your question about the extension. That extension is
not available to any of the crude oil or ethanol. I
believe that extension would only be available for the
other flammables. I think only Packing Group 3, if
memory serves, so it only impacts a small segment of
the Class-III flammable liquid fleet.

MEMBER SUMWALT: Thank you very much for
that. While I've got you on the hook, HM-251 states
that new tank cars constructed after October the 1st of
2015 are required to meet the 117 design and
performance requirements for use in high-hazard
flammable trains, and so I think the language is fairly
clear, but nevertheless, this question came up when we
were working on our planning, does this mean if I had
ordered a car prior to October the 1st, it could still
be constructed to older standards or does it mean that
anything -- I mean, if I ordered it in, say, July of
last year, and I wasn't going to take delivery of it
until, say, 1st of January of this year, would that car
have to be -- let's say it was built -- let's say it
was ordered in July, but it wasn't constructed until
the 1st of January, to which standard would that have
to be -- could that be built to an old standard?

MR. HULICK: No. It's the date of
manufacture, very clear, so any asset destined for
Class-III flammable liquid service would have to be
conforming to DOT-117 as of that date.

MEMBER SUMWALT: Thanks. That's exactly the
way I read that, but we had that question, so we want
to make sure. And, Greg, please jump in.

MR. SAXTON: Can I put a fine point on that?
It's still legal to build a 111. It's just, you can't
put these Class-IIIIs in them, according to these dates.

MEMBER SUMWALT: Right. And so we mentioned
the word high-hazard flammable train, and can you
describe what that is? If you don't, we've got it, but
wanted, for those watching, it's a block of 20 or 35 in
any train. Is that, basically, correct? Yes. So
that's, when we mention high-hazard flammable train,
what we're talking about.
And that's a really good point, Greg, there
that, yes, the 117s can still be constructed, they just
can't be used for use in carrying flammable liquids.

MR. SAXTON: Right, the 111s.

MEMBER SUMWALT: Yes. Thank you. So, Bob, let me jump back to you. You mentioned that a lot of
the 111s, I think, the legacy tank cars, have been
removed from service from crude, 97 percent of them, I believe, or nearly, where have those cars gone? Are they being used to store product while sitting on a
track side, on a siding, or what's going on with those?

MR. FRONCZAK: I cannot answer that question. I can say that there are a lot of cars in
storage, but somebody, theoretically, could take the cars that were transporting crude oil and move them
into ethanol or other flammable liquid service, but I don't know if that is happening.

MEMBER SUMWALT: Does anybody know?

MR. GARD: Anecdotally, we're seeing a lot
of storage of the old DOT-111s on short line railroads,
and they're just pulling them out of service.

MEMBER SUMWALT: Are they stored with
product?

MR. GARD: They're stored empty. They are
being stored empty.
MEMBER SUMWALT: Okay. Thanks. And, Karl, please.

MR. ALEXY: There's a rule that prohibits, you know, storage of product in transportation, so there's a 48-hour rule, unless it's on private track, so there's something that's going to prohibit them from doing that.

MEMBER SUMWALT: And except for private track, is there a lot of private track out there? I'm just trying to get an idea.

MR. ALEXY: I don't know. That's a good question. I mean, you know, that private track is something where someone has exclusive access to that. You know, the railroads lease it to someone and they have exclusive use.

MEMBER SUMWALT: Thanks a lot. Thank you. We're really running out of time, but, please, Dick.

MR. KLOSTER: One comment on the use of a large general purpose tank car in non-flammable liquid, 95 percent of the commodity base that wants to move in these larger cars are flammable liquids. So at the end of the day when fleet owners are looking at cascading these cars into non-flammable service, you're going to have 20-plus candidate cars for every one car that actually needs to be, so you're going to have to change
the spec of the car, you know, otherwise there's really no viable use for them.

MEMBER SUMWALT: Great point. And, John?

MR. BYRNE: Just want to comment that we do know that since 2013, approximately 4000 DOT-111s have been, basically, scrapped.

MEMBER SUMWALT: Four thousand legacy tank cars have been scrapped since when?

MR. BYRNE: 2013.

MEMBER SUMWALT: 2013. Thank you. Kelly or Gabe?

MR. KLOSTER: Just one more point. Another thing about cascading a car that was in crude service to ethanol, and maybe, Kelly, you can kind of comment on this, but from understanding is, is that, a lot of ethanol shippers do not want to use that car because it cannot really ever be sufficiently cleaned to get the crude out of it for ethanol shipment.

Taking a car that was in crude service, cleaning it to put it in ethanol service, there's a lot of resistance from ethanol shippers in actually taking on an ex-crude car.

MS. DAVIS: It is a process. We actually have a conversion guide. We had to produce that pretty early in the process when crude by rail came on. We do
need a fungible tank car system and it is a costly system to clean them out.

MEMBER SUMWALT: Thanks. Boy, this is already a great discussion and we're kind of running out of time for this discussion. So many more things I'd like to ask and I've got a bunch more questions, but let me turn first to our panel here and see what questions they have, and then those that might be coming in from the audiences.

MR. STANCIL: Yes, just to tack on to, I think it was that, John was saying regarding transitioning crude oil cars to ethanol. In our investigation of the accident in Lesterville, South Dakota, we noted that there was some cars in the consist that had been converted. These were jacket CPC-1232s and they had been converted from crude oil to ethanol use. Is that a widespread thing? Is that happening often?

MR. BYRNE: I can tell you that, based on our look, 2013 through first quarter 2016, with respect to ethanol, in 2013, there were 2 percent of the ethanol fleet was CPC-1232 cars, that, basically, went up to 8 percent for the non-jacketed cars and 2 percent for the jacketed cars, so there has been, you know, 10 percent of the ethanol fleet right now looks to be in
the CPC-1232 car.

MR. STANCIL: And are these cars coming from the ethanol fleet -- from the crude oil fleet?

MR. BYRNE: Not sure.

MR. STANCIL: Okay. If you bring a car in from crude oil, does there require any additional modification? Is there anything, like, with respect to the gaskets, for instance, is there something that needs to be done to prepare that car?

MR. BYRNE: I'm not aware of a significant amount of work to be done. I think with respect to moving from crude to ethanol, it mostly has to do with interior prep, baking the hydrocarbons out of the car, and things like that, so it's really more of a cleaning process.

MR. HULICK: Just one other comment on that, Paul, there are some gaskets that would be used in crude oil that may not be compatible for ethanol and that gasket would have to be changed, but that's not all the cases, but there are some instances.

MR. STANCIL: But beyond that, and cleaning the tank car, there's no reason why a car in crude oil service could not be used in ethanol, correct?

MR. KLOSTER: No, I mean, there also might be some valve work, but that's going to be specific to
the actual shipper, what his choices are, but at the
day, that happens all the time. You have a
tank car going from, you know, one shipper to the next
shipper with a different commodity, and it's the cost
of doing business to change out the valves and gaskets,
so it's not an economically onerous thing.

MR. STANCIL: Thank you.

MR. KLOSTER: I think the thing, if you look
at it, CPC-1232s didn't get started being produced
until, you know, mid-2012, because the rule said
ordered on or after October 1st, so it was probably not
until 2012. And so when you understand who buys these
cars, if it's a shipper buying a car, an ethanol car or
a crude company, they're going to put that car into the
service that they have.

It's the leasing company cars, you know,
that would be switched from one to the other, but the
reality is, it's only been four years, and most of
those leases that were done were, you know, five-plus
years, so I don't think there have been a lot of cars
that have come up for renewal to necessarily, you know,
create that, you know, big population of cars that
might move from one service to the other.

If we hadn't had the downturn in oil prices,
you know, and things were going like they used to be,
you know, that may have been a bigger thing, but
there's just a big huge disconnect between the market
reality of how many cars we're going to need for the
crude fleet versus how many cars we actually built for
the crude fleet, and that's going to be a big problem
going forward.

MEMBER SUMWALT: Right. I've got two
questions from the webcast. These are great questions,
so I want to ask them. We've really just hit 45
minutes for this panel, but these are good questions,
and we do want to encourage people to submit questions,
and we appreciate them, and I think these are right on
point.

One is from the webcast, AAR is saying that
about 10,300 DOT-117 and 117Rs are in service as of
June the 30th, and what type of service are these cars
currently in, and please break out by commodity. And
then a subpart to that is, what is the expectation for
how many 117s and 117Rs will be in operation by the end
of 2016 and by the end of '17?

And you may not have that right at the tip
of your fingers, but here's the gist of it right here.

MR. FRONCZAK: So what I've got for cars
that have transported commodities in the first quarter
of 2016, there are 1786 in -- and these are all 117
cars, brand new 117s, 1786 in crude oil, 918 in ethanol, and 391 in other flammable liquid service. On the 117Rs, there's 116 in crude oil, 0 in ethanol, and 21 in other flammable.

But there are some -- there is some overpackaging that occurs in 105s, 112s, 114s, 115s, 120s, and there's a reasonable amount of cars that are actually being overpackaged today. Eight thousand eighty-two cars in other flammable liquid are in those other car types.

MEMBER SUMWALT: Thank you very much and we really did not want a PowerPoint presentation and all, but Bob was nice enough to prepare us slides which are going to resides on the NTSB's Web site under this advocacy event. We have our own page dedicated for this, so those will be on the Web, I believe, and thank you very much for preparing all that data.

One more. This from talking about the Cherry Valley accident that occurred in June of 2009. And so anybody can jump in on this one, given that the Cherry Valley incident involved a long unit train of ethanol, when did the block shipment of ethanol versus long unit train shipping method as AAR has suggested? I'm not sure I totally understand the question, but I'm not sure, but, Bob, if you can take a stab at that.
MR. FRONCZAK: Well, I don't have statistics on the number of unit trains versus large blocks, and all I can think of is, if anybody in the room, Kelly Davis might have an understanding of how her shippers ship.

MS. DAVIS: Well, we do 70 percent. We do ship 70 percent of our product on the rail. Unit trains has been an increasing transportation efficiency that we have been using. It is difficult to get numbers. It resides in an area that's difficult to get numbers, but we are encouraged to do more unit trains. We ship by blocks, but we ship a lot of single cars too; a mass quantity.

I would suggest that, probably, we may be 40 percent unit train, and that is just one snapshot number that I requested from the AAR recently.

MEMBER SUMWALT: So if we were to use the definition of high hazard flammable train, where 20 or more shipped in a continuous block, or a total of more than 35 in the entire train consist, what percentage would you think would meet that definition?

MS. DAVIS: Well, that's going to happen in the yards. Our ethanol plants in the Midwest, some don't even own cars of a 20 fleet, so they would always be dispatching what we call singletons, you know,
single cars, in the commerce, but once they get to the Chicago rail yards, it would be the railroads then that would have the ability to form that consist.

MEMBER SUMWALT: Great. Thank you.

Fabulous discussions. Dick, you wanted to jump in there, so please go ahead.

MR. KLOSTER: I actually have some numbers.

MEMBER SUMWALT: Wonderful.

MR. KLOSTER: So this is based on an analysis of the 2014 Public Use Way Bill, and you're pretty close.

MS. DAVIS: Good.

MR. KLOSTER: It also depends on how you define a unit train, but basically, 32 percent of all the ethanol shipments were single car, about 20 percent were multiple car shipments of anywhere from 2 to 74 cars, 46 percent were shipments of 75 to 99, and less than 1 percent were over 100 cars, so it's really single car and then that 50 to 75, you know, large block, maybe a unit train, maybe some other cars on the tail end of the train.

MEMBER SUMWALT: Thanks. Another thing too, if you're mentioning those figures, I'm thinking, wow, I wish I was writing that down, but we do have a court reporter, and I believe we're going to get a quick
turnaround on this transcript, and that also will
reside on the NTSB's Web page, so thank you. This has
been a fascinating discussion and we are going to move
now into the second topic, so Nicholas, if you'd set
the clock for 35 minutes, we're going to chop it down
just a bit so we can remain somewhat on schedule.

This second topic is, we're going to move
from the first topic, we talked about the deadlines,
the new standards, how the government regulators will
monitor that, we've gotten some good numbers from AAR,
now we're going to go to the tank car manufacturing,
leasing, and outlook.

So I think the big question is going to be,
is there adequate capacity within the tank car
manufacturers to manufacture or retrofit to meet the
117 standards? And that's a general question that I
think will be the overriding theme of this panel, but
let me ask you this, are there concerns from the tank
car manufacturers to be able to meet whatever demand
there is? Greg? Bob?

MR. SAXTON: Actually, no. I really think
right now there's sufficient capacity. There's excess
capacity. And there might even be some 117Js that are
looking for homes right now that are stored, so we'd
love an order.
MEMBER SUMWALT: Wonderful. And when you say the 117J, that is the basic 117 car, is that right?

MR. SAXTON: Yes, as opposed to the 117R, which, of course, is a retrofit, and then there's also a --

MEMBER SUMWALT: P.

MR. SAXTON: -- P for performance, but J is what we're building new.

MEMBER SUMWALT: Yes. So 117J is -- yes, 117, because I saw that term and I thought, what is that, and so I just wanted to make sure I understood. Anybody building anything to the 117P, which is the performance standard? Any plans for that, unless that's --

MR. SAXTON: Not that I'm aware of. Bob?

MR. HULICK: Not at this time. It's an option that's open to us.

MEMBER SUMWALT: Great.

MR. HULICK: When you talk about production in the past, I think you also have to bear in mind the tank car manufacturing footprint has been very resilient in its ability to ramp up or to retract based on demand. Just a couple numbers. In 2014, various economic review agencies have tracked the production of tank cars that just north of 35,000 in 2014, just north
of 36,000 in 2015.

Those same forecasters are now saying, this year, there may be 20,000 constructed. So you see that there is certainly a reduction in what's being built as compared to capacity that was established in recent past.

MEMBER SUMWALT: Now, both that figure up, that you and I had a sidebar conversation yesterday, and I want to make sure that I heard it right this time too, did you basically say that between 35,000 and 40,000 tank cars were built last year?

MR. HULICK: 36,000 last year and 35,000 in 2014.

MEMBER SUMWALT: And that includes the pressure tank car fleet as well.

MR. HULICK: That's all tank cars.

MEMBER SUMWALT: Right. But from those numbers, let's say, what percentage -- about how many -- well, you've already said, Bob, that already, there's about 10,200 117 out there in the fleet, and that started -- when did that actually start? October the 1st of last year or when did that actually start? And maybe these guys can tell us. Please.

MR. BYRNE: That actually started in the first quarter of 2015 and we are in the neighborhood
of, you know, 10,000 cars, plus there's probably about, you know, 1000 cars or so that were built prior to the existence of the standard, where the car characteristics would meet the requirements of a 117, but they were registered as 111s, and they're looked at as CPC-1232s, so there's actually more than 10,000 out there now.

MEMBER SUMWALT: Interesting. And a figure that I saw in an AP article this morning, said that, really, the 10,000 is about 20 percent of the 50,000-some-odd tank cars that are used in high hazard flammable trains, I think, so that's 20 percent of that section of the fleet that's been built in a year and a half.

So if you do the math on that, we should be able to meet these deadlines. Am I thinking correctly? I was never very good at math. In fact, I was awful at math.

MR. HULICK: Well, you know, our side companies have committed that we will certainly meet the deadlines that are established by the regulatory agencies.

MEMBER SUMWALT: That's certainly encouraging news. Thank you. Please, Dick.

MR. KLOSTER: Would you like some more
numbers?

MEMBER SUMWALT: Absolutely.

MR. KLOSTER: Okay. So I am one of those forecasters and the 36,300-some-odd cars that were built last year, our estimates are that about a little over 11,000 -- I'm sorry, a little over 17,000 were in the large general purpose class, which is the cars that we're talking about here today would be. About 11,000 were in the pressure category, very much skewed to the largest cars, and then the rest were all the other tank cars, to give you a scaling.

And what's happening this year, when we're down to 20,000, is that there's a big shift away from delivering the large general purpose cars to other car types because as the crude cycle, and also the ethanol cycle before, new car costs got bid up so high that a lot of the, you know, regular shippers of corn syrup, and sulfur, and things like that, the cost of their cars became, you know, so onerous that they delayed their normalized replacement demand.

So you had a little bit of a pent up demand, which, after the ethanol cycle, started to play itself out, and then got stopped dead in its tracks with the buildup of the crude fleet, and which is now trailing down, so you've got a transition of the new car tank
car market back to the old historical replacement-driven market for all kinds of cars, and that's going to pickup speed, and it's still going to keep the deliveries this year, through 2020, well above the historical trend of about 10,000 tank cars a year, so to give some perspective.

MEMBER SUMWALT: Thank you very much. Any idea, Dick, can you tell us to what extent surplus crude oil tank cars are being placed into ethanol service? Does anybody know that? So we had, you know, two years ago, huge crude by rail, that's down by a pretty good chunk right now, and so where are those cars going? I think you said that they're not going into ethanol service because the ethanol shippers don't want cars that have been in crude oil.

MR. KLOSTER: Yes, I mean, if you look at Bob's chart, what he says is in this space, if you will, we've got 100,000 cars that are needed. The reality is, is that, in the first of the year, the fleet for these general purpose cars, large general purpose cars, is 128,000, so just by math, we've got, you know, almost 30,000 too many cars for the volume of freight that we have today.

And so what's happening is, you've got people -- you've got, you know, ethanol, which is still

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25  freight that we have today.

And so what's happening is, you've got people -- you've got, you know, ethanol, which is still
kind of steady Eddy, you know, going up a little bit, so they're retaining their cars, they're not moving to the new standard because they don't have to until after 2020, you have the crude side, which is, you know, pushing cars out because, you know, their volumes are down significantly.

They've already, pretty much, gotten rid of all the 111s that were on their fleet, so, you know, what it is, is now it's building 117s, a little bit of 117Rs, and then the continued use of the CPC-1232s, which will be the base for any retrofits going forward to 117Rs. They won't necessarily be in crude, the old legacy ethanol 111s, they'll be CPC-1232s, for the most part, retrofitted to 117s.

DR. NEELS: And John had already commented before that the composition of the ethanol fleet had shifted pretty substantially in the direction of the 1232 cars.

MR. BYRNE: Well, yes, between 2013, ethanol, basically, and 2016, the percentage of CPC-1232 cars in ethanol went from 2 percent to 10 percent.

MEMBER SUMWALT: And I want to hear that again, so the percentage of cars that were in service for ethanol has gone from 2 percent to 10 percent?

MR. BYRNE: CPC-1232 cars.
MEMBER SUMWALT: Okay.

DR. NEELS: I think the composition of the ethanol fleet has shifted in that way, relatively more 1232s, relatively fewer legacy 111s.

MEMBER SUMWALT: Okay.

MR. KLOSTER: But if you're 10 percent 1232, that means you're 90 percent 111s, so there's a long way to go, but also a long lead time for that side of the user group to --

MR. BYRNE: Right. You're 85 percent DOT 111s in ethanol.

MEMBER SUMWALT: And like you say, those deadlines are basically the middle of 2023, I believe, so how far away is that from here? Seven years? Whatever year this is. Yes, that's about seven years away. So, Kelly, do you want to jump in on that? I mean, the crude oil demand is down, so could some of that excess manufacturing capacity that's not being taken up by crude, would there be much interest in your members of going ahead and jumping on those 117s now, that would mean they'd have to spend the money seven years or six years before they're really required to.

MS. DAVIS: Right. You hit the nail on the head with money, and also, where they are within the business contract of their current leases. The ethanol
industry leases a lot of cars, so I would prefer to just defer to the people who, you know, lease the cars to the ethanol shippers to have some comments relative to that. I would like to learn that myself.

MEMBER SUMWALT: About how many cars are in -- would be in a fleet for ethanol service?

MS. DAVIS: We have about, well, according to the stats here, 29,000 to 30,000 cars in ethanol service.

MEMBER SUMWALT: And I think what you just said was about 80 percent of those still the legacy cars?

MS. DAVIS: Yes. You have to realize that 85 percent of our whole fleet was built from 2006 forward. These are relatively new cars and it was new investment made on behalf of the ethanol industry, so as we comply with the FAST Act regulations, the business side, with the lessers and the lessees, becomes the area, due to contracts and things like that.

MEMBER SUMWALT: Great. And one of the later panels, we do want to get in to see if we can get an idea of the relative cost of a new car versus a retrofitted car, something like that, so --

DR. NEELS: I might want to add something to
what Kelly said, because she made a pretty big point, we've been talking a lot about the technical capabilities of the car, but the institutional arrangements, you know, the leases, the terms of the leases, the specific cars that they include are at least something that one has to work through if you're shifting new cars into service.

If a shipper has contracted with a group of cars, he's got those cars for a specific term. And as these changes take place, they have to take place within new leases, and new shippers, and new contracts for this to work, so that institutional side of this is also something we need to keep in mind.

MEMBER SUMWALT: Thank you. We just got a question from the audience, the audience here in the boardroom, and so I'll toss it out to see where you are, how much does the added steel in the related equipment to the 117 standards, what does that do to the capacity, to the car capacity? Is this significant? Is the shipper going to need more cars to transport the same quantity of product?

And as I recall, there's a provision to go from a 263,000-pound car up to 286,000, I believe, so I believe it's a net -- it's a wash, I believe, but Karl, please jump in on that.
MR. ALEXY: Yes, that's correct. Now, this is something that we put in pretty good detail in the final rule, how we arrived at that conclusion, but yes, all the added safety features that we require, thicker steel, head shields, jacket, insulation, or thermal protection, would there be, basically, a zero net sum for the weight and the capacity.

You know, this material will fill a -- you know, it reaches the capacity -- well, the capacity of the tank's 30,000 gallons, roughly, and, you know, given the weight of the material, you don't lose any capacity for that.

MEMBER SUMWALT: So in that respect, we don't expect an unintended consequence because the same number of cars in a train should be able to carry, basically, the same capacity. Please, Greg.

MR. CLAYPOOL: All right. I'm going to have to respectfully disagree with that. Probably don't know the named car plans, but I can tell you we're one of 15 crude by rail terminals in the Bakken or the Williston Basin, and we've launched 500-plus trains in the last two years. There is absolutely a loss of volume in the new car size versus the legacy 1232s, not the 111, but the 1232. That was a large reason why you started to see people move away from the 111 to the
1232, was the larger volume that you could unload.

The new 117 standards are a smaller volume car, so it's very detrimental in the land of business or economics to the shipper itself.

**MEMBER SUMWALT:** And the dimensions of the inner shell are the same, is that true? If anything, the dimensions of the outer -- the outer dimensions would increase, but is it true that the inner dimensions are the same?

**MR. DORSEY:** They're slightly smaller. The problem is, of course, you have some other considerations in that we have constraints on how wide a car can be, depending on how long it can be. What I've seen is, some builders had been able to get cars up slightly over 31,000 gallons, and the new 117s, you're a little under 30,000 gallons. I don't know what that specifically does to your business, but there is a decrease when you go to the 117s, but it's a -- I don't know. You'd have to talk to the --

**MR. CLAYPOOL:** It's, roughly, from a 1232 car type in the crude oil world, specifically, it was 725 barrels, is what we had put in that legacy 1232, the new 117s are somewhere in the 685 range, which doesn't sound like much, except when you're in the game of pennies, those 40 barrels might be your profit.
margin, so it's a game changer for the shipper.

MEMBER SUMWALT: Great. And I appreciate that perspective. And, Bob, I think you wanted to jump in, and then we've got some folks over here, so great discussion. Thank you for that.

MR. FRONCZAK: Yes, I think it's very difficult to answer this question, you know, simply, right? It depends on what your baseline is. If your baseline is an old 263,000-pound tank car, DOT-111 tank car, you're really not going to lose any product when you're going to a 117 at 286,000 pounds.

But if you started, like the gentleman here said, you know, a 286,000-pound tank car, the volume is the same, right, but you have a total gross weight on rail that remains 286,000, so whatever steel you add for extra protection, a head shield, a jacket, you're going to be taking away from product, so it's a complex question.

MEMBER SUMWALT: Wonderful discussion.

Let's jump over here. Bob?

MR. HULICK: Yes, I agree with Bob's assessment, and we really have separate markets. And, you know, based on the density of the product, and we have the ethanol market, we have the shale market, and then we have the heavy crude market, so the impact of
these regulations on the existing cars varies. And obviously, if it was a 263,000 gross rail load car, and you can go to 286,000, that can accommodate the improvements that are applied to the car, but you're absolutely right, you know, Gabe's comment about the good faith non-jacketed car, CPC-1232 non-jacketed cars, compared to the DOT-117, there is a slight decrease in the carrying capacity.

So you have to get into those specifics and, you know, in many cases, you also have to talk about, you know, the density of the product and how that relates to the volume of the tank car, et cetera. We won't get into all those gory details today, but it's a complex discussion.

MEMBER SUMWALT: Wonderful discussion. Anybody else want to comment on that particular topic before I toss it over here to our panel? Dick, please.

MR. KLOSTER: So one point Bob just said and what Gabe just said, you know, so we started out with the 30,000-gallon, 263,000-pound capacity gross rail load car during the ethanol cycle, and then when CPC-1232 came in, that was when, you know, the Bakken was hot, and so the Bakken crude is more of a light suite, didn't require coils and insulation, so the cars were scaled up to 286,000, and that meant that 30,000-gallon
jump to 31,800.

Then when you enter in the fact that the market moved up to Canada, you needed to add some -- and that's about 9000 pounds when you go from a legacy 111, non-coiled, non-insulated, non-jacketed car, you know, to the 286,000 117, that's about a 10,000 car jump -- or 10,000-pound jump, but the problem with retrofits is that the gallon-ish capacity didn't change, so you're going to have to go to 286,000. You're going to add 10,000 pounds, you don't want to have to light load the car, so you're going to have to go through the expense of going to 286,000 on that 30,000-gallon car.

MEMBER SUMWALT: Thank you.

MR. HULICK: And one related comment, and maybe Kelly can help me answer this, but one of the things, you know, we've heard from a number of the ethanol shippers is, not all their lanes can accommodate a 286,000-pound gross rail load car, so while the math works out on the capacity, et cetera, as how much you can put in the car, there may be lanes where that can't be used, so it has to be light loaded to be able to meet.

MS. DAVIS: Yes, the ethanol industry is rural, so yes, we have plants that are restricted
through bridges and other infrastructure projects that still will have to load at the 263,000 max pounds.

MEMBER SUMWALT: Fascinating. Thank you.

MS. DAVIS: I would like to ask a question.

What is the tare weight of a 117J?

MR. HULICK: What size?

MS. DAVIS: The ones the ethanol guys are going to be using.

MR. HULICK: Well, I think, typically, you know, that market's focusing on a 30,300-gallon car.

MS. DAVIS: 30,300?

MR. HULICK: And so the light weight of that car is, let me do the quick math here, about 90,500 pounds.

MS. DAVIS: Yes, typically, our cars in service right now have about a 66,000-pound tare weight, and so you're saying they're, like, 90,000? Thank you. That's the first time I've heard that number.

MEMBER SUMWALT: So to be clear, when we say the 117 and the 117J, those are the same. The only 117 that's different for this discussion would be the 117R, which is the retrofitted versions, I believe, just so that everybody's on the same page.

So I'm going to turn it over to our panel.
for a few questions.

MR. STANCIL: Yes, just a comment on what Kelly just said and the context of this conversation in general, in a lot of our recent accident investigations, one of the things we do check is the outage on these tank cars to make sure that they're complying with the 1 percent requirement, and that has a lot to do with puncture resistance, so we're concerned about that.

What we're finding, and especially in crude oil, a lot of these outages that are running between 3 and 6 percent is, you know, if you're worried about the carrying capacity of these cars, is that consistent with, you know, the way it's generally loaded in the industry, and if so, what difference does a few hundred gallons make in carrying capacity if you're not loading them completely?

MS. DAVIS: I hear what you're saying. Ethanol has a high coefficient of expansion and we ship to all districts in the country, so we're always been very overly cautious of filling our cars too full. As we have progressed as an industry, we have realized that our transportation efficiency is probably not all the way as it should be, compared to crude who came into the business and did that, so we have -- there's a
lot of people that still load these cars that can hold, probably, 29,500 gallons, they'll still load them an extra 1000 gallons short.

So those, I hear what you're saying, but in the context of the people who are transportation efficient, and that's the kind of person that's watching the numbers on the tare weight and what you can get. And 100 gallons over a course of a 100-million-gallon facility, that's a lot of money.

MR. STANCIL: Yes, and, Gabe, you expressed the most concern about this. What sort of outages are you loading your cars to?

MR. CLAYPOOL: Yes, it's a very specific formula. So we have a state-of-the-art system, as does most of the people in the Bakken, running through Coriolis meters, which are state of the art, and it's a very complicated formula that goes into BS&W, temperature correction, sulfur content, so we're taking a real-time sample, and that goes into the formula that are system then tells what our cars can load, but we're absolutely underloading these things.

I mean, a 685-barrel car, legacy 111, has a capacity for 725. A 318 has the capacities for, don't quote me on the math, but like 760, and we set our standard at 725, but we're very careful about loading
these cars, for various reasons, including expansion. We've got light sweet crude oil and heat is not its friend from a pressure perspective, so we take a very systematic approach, as does, I believe, most of our industry, to loading these cars, and they are all underloaded.

MR. STANCIL: And, Denford, is that consistent with how your operation works?

MR. JAJA: Yes, that is true.

MR. KLOSTER: A comment to your question, this is not just an ethanol or a crude, it's an all-rail bulk commodity answer. You're taking me back to my railroad costing and pricing days a long time ago, and the point is, is that, rail is a high fixed cost proposition, so to move that first pound of freight, you've already, the railroad has already incurred, you know, 60 percent of its cost to move that car.

And so what shippers of anything from crude to ethanol, to soda ash, to grain, or whatever, transportation can make or break markets, so being able to utilize the full capacity of that car and get every pound or extra ton shipped, helps them make their margins and can make or break a sale, so that's why there's such a high level of concern with losing, you know, nominal capacity in a car by adding weight to it,
because we've got this upper limit called 286 that we--
- you can't go beyond.

MR. VORDERBRUEGGEN: This kind of comment, based on what Gabe and Denford were saying, we've examined at least one accident that involved Bakken crude and the filling process was done from the well head through tank trucks into rail cars, and what we saw there was, they weren't as concerned about topping off the tank car, because it's a pain in the neck when you are trying to offload a portion of a tank truck, so they were just taking as many tank trucks to get as much in as they could, and they weren't necessarily topping off, using that term.

Is that changing? In the oil patch, are they using more of a where they're putting it into storage tanks intermediately so that they then can take full advantage of the capacity? Is that a change in the production fields?

MR. JAJA: Yes, that is a change. We are putting it into storage tanks first and then it goes through the system that calculates how much volume is to go in a car more accurately for us.

MR. VORDERBRUEGGEN: Okay. Thank you. One other quick question, and maybe it's getting a little bit in the weeds, but in the new standards, the
manufacturers have a choice of using the TC-128 steel, and it can be 1/2-inch wall, or they can choose the ASTMA-516, which forces the heavier wall thickness to 9/16. Obviously, there's a slight weight difference there, which may be insignificant in the grand scheme of things, but what is the manufacturers doing? Are you making them all to the TC-128 or does it really matter to the lesers and the buyers?

MR. SAXTON: So the new cars are all 9/16 TC-128.

MEMBER SUMWALT: And by regulation, they have to be the TC-128.

MR. SAXTON: I believe that's true.

MEMBER SUMWALT: They can't be the 5/16, but is that right?

MR. DORSEY: That's true. There were a few CPC-1232s, not very many, that were made out of 5/16 70 to the thicker dimensions. Generally, because the manufacturer had trouble accessing TC-128 at the time. It was not very -- a prominent practice.

MEMBER SUMWALT: Any other questions? I'll tell you what, this discussion has been fabulous and this is the type of interaction we would love to have. The less I'm talking, the more you're talking, the better. I mean, so I think whatever you're doing, keep
doing. We've gotten three great questions from the audience, whether it's here in person or whether it's via Internet, and they're right on point, so keep doing that.

We're going to break in just a second, but I'd like to introduce the NTSB Chairman, the Honorable Christopher A. Hart, who has come. The Chairman is going to be here, he's been here this morning, and he came to make sure that he had the opportunity to meet you during the break, so thank you, Mr. Chairman, for being here. Your staff has done a beautiful job putting this together, I can tell you that.

So why don't we break until 11:05. Thank you very much.

(Whereupon, the above-entitled matter went off the record at 10:47 a.m. and resumed at 11:07 a.m.)

MEMBER SUMWALT: Okay. We're going to get started here. Okay. Welcome back. And I did want to note, and I did not see my colleague, Member Earl Weener, who's in the audience. Member Weener's been here all morning, but I've been fairly busy and paying attention to what's going on out here and not what's going on out there. Member Weener, welcome, and I know the folks will enjoy interacting with you at the next break.
What I'd like to do, we didn't really formalize how we will collect the questions from the boardroom audience, so if you have questions that you've written down on the index cards, about ten minutes before the end of the session, we'll get Mike Hughes. Mike, when people just -- when you talk through the aisle, just raise your cards and Mike will collect them.

Any other housekeeping items that we had?

Now, we're going to start this next topic, but before we do, Rachael had a follow-up question from the last panel, so go right ahead, Rachael.

MS. GUNARATNAM: Thank you. I just had a question about the, I think it was Greg that mentioned there was an excess capacity right now of 117s, is that what you said?

MR. SAXTON: There are some in storage.

MS. GUNARATNAM: Storage, and so I was wondering why they're not in use right now if there's excess capacity, and maybe that's a question more for the shippers too of, like, how do you -- your fleet composition, how much of those are 117s versus 111s and 1232s, and your decision for using a 117 over a 111 and 1232.

MR. CLAYPOOL: All right. A lot of it's
based on current obligations. So are people still in
leases for the 1232 car type? Did they sign up for a
new lease on a 117? So a lot of it is existing
obligations and a lot of its economics as well. We
were just having a conversation around the sizings of
the car, but the 1232 car type is still very much in
abundance and it's also a larger car.

So in the current category of still trying
to be profitable, if I can get that extra volume in a
larger car that's still regulatorarily compliant, if
that's a word, they're going to stick with that, but a
lot of it's, frankly, just, what are my current
obligations?

MR. JAJA: I would also like to add to that,
pipeline capacity is increasing in the Bakken, so a lot
of the barrels are being moved from rail into pipe, so
there is less need for more cars.

MR. SUPKO: I think I would also like to
say, you know, in regulations, you often create a
requirement. The requirement, in this case, for these
deadlines is the absolute last moment. So, you know,
any sooner would be appreciated by the department, I
believe, you know, to push these deadlines. Like, you
know, obviously the FAST Act locks us into some
timelines, which we're following, but again, that's
kind of the absolute last moment when we want it done.

MS. GUNARATNAM: I just had a question for Suzanne, welcome, I just wanted to follow-up on what Denford said about, do you have any comment about the shift from rail to pipeline?

MS. LEMIEUX: I mean, from a cost perspective in the long term, once contracted and built, pipelines are certainly a cheaper option for shipping and are, you know, obviously more controlled and you have more consistency, I think, from an API perspective, we are for all of the above options for transportation. That's what creates flexibility in the system and allows us to meet customer demand, regardless of where it is, and obviously, price is a considerable factor.

And we've seen more -- as Denford said, we've seen a lot more pipeline capacity come online in the Bakken and that's what we've been working on for several years, is to get that option there because again, once built and contracted, it's cheaper, and transportation does, as mentioned earlier, make or break markets, especially in the low-price environment that we're in right now.

MR. CLAYPOOL: Just to stick with Mr. Kloster's math, or some numbers for you, just because I
have it right in front of me, December of 2014, the Bakken was producing about 1.3 million barrels a day, 35 percent of that volume was leaving by pipeline, 58 percent of it -- sorry, 59 percent of it was leaving by rail.

Fast forward 16 months to the most recent data, this is, again, the state data, this is not my math, the pipeline percentage of the takeaway has gone from 35 percent to 58 percent, and the Bakken crude by rail market has gone from 59 percent of capacity, or market share, to 33 percent of market share, so it's pretty substantial in a very short period of time.

MR. KOTCHOUNIAN: Regarding the car leases, and without getting into commercial confidential considerations, are there any provisions normally in car leases for the commodity for which the car is leased? And if yes, how does this play when, for example, within the lease period, the rules are changed prohibiting the use of that car for that commodity for which it was originally leased?

MR. CLAYPOOL: I could answer from a shippers history perspective, but Mr. Johnson's real time can you give you a much better answer.

MR. JOHNSON: So from a leasing perspective, yes, our contracts typically spell out what commodities
the car has been leased for. We don't necessarily know exactly what commodities a shipper may put in a car, but we know what the product was contracted for. In our case, you know, we ask the shipper to notify us if they want to change commodities so that we at least have an opportunity to understand if there's any regulatory impacts that would change, you know, our data collection and inspection of the car, but there's really nothing that would prevent a shipper from putting the car into some other service.

MR. KOTCHOUNIAN: Correct. Thank you. And so if the car, for example, is shipped -- is leased for packing 1, 2, and 3 crude oil, and then, let's say, five years ago, and now there's rules that have come into play that eventually would prohibit the use of that car into that service for which it was leased, how is that addressed within the leases of the car? Is the person who leased the car is stuck by and holding the bag?

MR. JOHNSON: I think it's typical in most tank car leases to have a mandatory modification clause that kicks in if there is some government-mandated regulator change to the car. The challenge with the tank car retrofit regulation is, if you follow the normal formula that's in most lease contracts, it is a
very cost-prohibitive modification to make.

And so I think we're going to let Wells Fargo handle it on a case-by-case basis. Certainly, the lease term, you know, it's going to come into play. I don't think we'll be, you know, executing the mandatory modification clause, just because it's going to be very, very onerous on a lessee.

MEMBER SUMWALT: Excellent. So we'll go now -- well, I'll tell you what, I've got one more question that we really did -- it was pointed out to me during the break that we didn't formalize the process for collecting the cards, so during the break, we did get a number of questions, which we do hope to be able to answer during the day, sort of at the tail end of panels or at the beginning of panels, or something, so we are collecting some, but at least now we do have in place a process to collect the cards toward the end of the panel.

But there's one more that I did want to ask that was given to me during the break, and so really, I'll open this up to whomever would like to take a shot at it, has any testing and/or analysis been done to estimate the performance of the 117 tank cars had they been -- let's see, has any testing or analysis been done to estimate the performance DOT-117 tank cars that
MR. ALEYX: It's difficult, but I guess the short answer is no. To reproduce all the specifics of an accident, there's so many variables that it's very difficult to do. What we did in the rulemaking was to take generic derailment scenarios and change a -- there were three variables that we changed and compared the outcome of the derailments using different brake systems, different tank cars, and different initial speeds.

So again, the short answer is, you know, we can do things qualitatively and looking to see how the cars may have arranged themselves to see if it's similar, but that's a very difficult thing to do.

MEMBER SUMWALT: Thanks, Bob.

MR. FRONCZAK: And I'd just like to go back to what I said when I opened up, I mean, we have a database that tracked, you know, over 40,000-some cars that have been involved in accidents, so we understand very well, you know, based on every single circumstance those tank cars are exposed to in accidents, how they perform, you know, from a conditional probability release, so if the car's involved in an accident, what's the percent probability that that car will release?
MR. SAXTON: I'd like to add one more point. Karl, you may not be aware that your friend, Francisco, has acquired a couple of 117Js for crash indenter testing out at DTCI. You'll crash a 12 x 12 indenter. And so there's work being done.

MR. ALEXY: But, yes, I understand that. I mean, so under very specific test conditions we can do it -- we can compare how it behaves under those test conditions.

MR. FRONCZAK: Yes.

MR. ALEXY: And if I could add something, and, Bob, I appreciate what you said, one of, you know, our concerns is that unit train operations and derailments of unit trains are unique, it's relatively recent, and that was one of our concerns, one of the things we really took into account during the rulemaking, you know, the behavior of a unit train of tank cars versus a mixed freight train is something that we think is different enough that we had to take a special approach, and that's what we did in the rulemaking.

MR. FRONCZAK: Can I follow-up just really quickly on that? No, I don't think it's going to go forever, Karl. I think that the -- I personally don't think that there's going to be any difference in impact
cause releases, and I may be proved wrong. That's fine. I think what we're seeing, though, is, when we have these derailments of unit trains, and we have a pool fire, we have thermally-caused releases, so the pressure relief device releases and, you know, you end up with a thermal tear, potentially, and, you know, right now, that's not well quantified.

But I do think with the new 117, with a thermal blanket, and the proper size pressure relief devices, those thermal tears go away.

MEMBER SUMWALT: Let's jump into Panel 3; Topic 3. Now we want to talk about retrofitting. The tank car retrofit logistics and capacity to meet the standards outlined in HM-251 and the FAST Act. So I think a good place to start would be for somebody just to describe the retrofit process, to take a -- well, do you anticipate any legacy cars being retrofitted to the 117 standards or will it just be the CPC-1232s that are retrofitted?

MR. BYRNE: Well, I can answer that. I think, you know, the RSI opinion is, we see as demand decreases for crude, the viability of legacy cars and retrofitting legacy cars kind of diminishes. So one of my expectations would be that there'd be more focus on retrofit of the CPC-1232 non-jacketed cars as opposed
to the, you know, legacy DOT non-jacketed car.

MEMBER SUMWALT: Great. Thank you. Would
one of you gentlemen be willing to just, sort of,
outline very quickly what the process is for a
retrofit? I read it, I think, in the Brattle report,
all the steps that are required, but just kind of tell
us what's required to perform that.

MR. BYRNE: I can give you, kind of, an
overview. Basically, in terms of retrofitting, and
we're talking about physical -- after this has been
negotiated with our customers and things, basically,
you have to have the car chopped, it's got to be
cleaned, okay, then you, basically, have to do any kind
of variable repair work, okay, because unlike
manufacturing, a retrofit's going to require that the
current car is qualified, brought up to standard, this
means addressing structural cracks, it could be wear of
components, damage to appliances, things like that.

All those things need to be done to get the
car to a state where it's consistent for the next step,
which is, pretty much, like manufacturing, in that,
you're going to go through different stages where, say,
the appliances are removed, okay? And then the thermal
blanket is applied, all right? In a separate station,
top fittings modification may be done.
But basically, you're going to install a thermal blanket, you're going to assemble and apply a jacket, you're going to apply head shields to the car, and then, you know, you're, basically, going to install valves and paint the car, re-weight the car, that kind of thing. That's kind of a general overview of what's required.

MEMBER SUMWALT: Perfect. And that's just what we were looking for. And so if everything goes according to plan in a point of time, what are we talking about? We're talking about a month? We're talking about seven days? What are you talking about?

MR. BYRNE: I think we're -- it's going to depend on shop backlogs and how you actually manage the flow of cars into the facility, but I think you're looking at, you know, somewhere around 60, 90 days, possibly.

MEMBER SUMWALT: 60 to 90 days, okay.

MR. BYRNE: And that's if you're doing it efficiently. When I say 60 to 90 days, I'm assuming that there's some investment in jacket fabrication equipment, overhead cranes that can manage the hanging of good sections of jacket, and things like that.

MEMBER SUMWALT: Thank you. Now, to be -- and, Ken, please.
MR. DORSEY: You were asking about legacy cars and they were talking about the viability. One of the things that you have to remember about the legacy cars, they are generally built as 263 cars, and to go to the new cars, they're going to be 286 cars. One of the large cost differences between a 1232 car and a legacy car is that the trucks are going to need to be replaced or rebuilt, at significant cost, to go to 286.

MR. BYRNE: Right. So as you go back with the older legacy cars, there's an extra cost for the castings, the truck castings, and things to get to 286 that, you know, kind of affects the economic viability of going back too far.

MEMBER SUMWALT: So it's certainly not just an issue of going and putting a jacket on it and sticking a thermal blanket on it. There's a lot more behind the scenes that aren't even apparent.

MR. BYRNE: Especially if you're going to contemplate working with the legacy fleet.

MEMBER SUMWALT: Right. Bob, you were going to jump in?

MR. HULICK: I was just going to mention that an RSI survey that we did during the rulemaking process suggested about 30 percent of the DOT-111 legacy tank cars would be retired, for the reasons that
Ken's outlined, you know, additional expense of all new truck castings. You know, I think John's outlined the work process very well.

And bear in mind that there's a lot of equipment that's going to be removed from that car just to facilitate the modification, that has to be reapplied to the car, and also, if a car is taken from 263 to 286 gross rail load, there's brake system modifications that need to be done, insulation of empty load equipment, and reconfiguration of the rigging so that there's a proper braking level on the more heavy car.

MEMBER SUMWALT: Do most of the 1232 cars have the increased truck to allow for the 286?

MR. HULICK: Yes, actually, the 1232 cars are 286 gross rail load, so they have the trucks already. It's the legacy fleet. And there is a significant number of those cars that do have the proper trucks. The industry moved to that type of truck for a number of other services, so they were equipped even though they were rated at 263.

MEMBER SUMWALT: Great. Thank you so much. So what I'd like to do, Karl and Bob, what -- is there a certification required for a shop to be able to do these retrofits?
MR. DORSEY: Yes, sir, there is. I have a list. There's 54 shops right now that would be of a certification that would allow them to do retrofits. Now, as John pointed out, that does not necessarily mean that they have the infrastructure in place to hang jackets or do large-scale heat treatment, post-weld heat treatment, when you're placing standoffs and things like that, so it would be a matter of a will of the shop manager to equip that.

Now, some of those are fairly small shops, so when John is talking about, you could do it efficiently, the small shop is going to have to do it as piece work, but they're capable. But my group does certify shops for quality assurance and technical competence to do that kind of work.

MEMBER SUMWALT: Thanks. Now, Ray, are you seeing any challenges with the retrofitting?

MR. MORGAN: There is no real challenges for the industry, I don't think, right now. The capacity exists to do what the commitments were for retrofits, whether they be the legacy cars or the newer versions.

MEMBER SUMWALT: Thanks. John, let me move over to you. The FAST Act requires that thermal blanket retrofits for the non-existing non-jacketed tank cars only. The Act is silent on thermal
protection for existing jacketed tank cars. We understand that, based on modeling, the RSI believes that the existing jacketed and insulated tank cars perform adequately in pool fires and has urged PHMSA and FRA to allow these cars to remain in service as is. Comments?

MR. BYRNE: That's correct. Based on our modeling, and some research done by the FRA on fiberglass insulation systems, the existence of a jacket and insulation, basically, meets the pool fire requirement, federal pool fire requirement, and so it would perform per the federal requirement as a thermal protection system, even though it's not listed as, you know, an approved thermal-blanket-type material.

Now, we have a request for a waiver on the existing jacketed cars, you know, because the fiberglass isn't listed as an approved material. That's the only reason we have that request in.

MEMBER SUMWALT: Okay. Let me get you to clarify something. Okay. So if you have a CPC-1232 car, let's see, out in Mosier, they had 1232 cars that breached and so let's find the notes on that. I've got it right here somewhere. Same type of tank cars that derailed in Mosier can be re-stenciled as a 117R and continue in service with nothing more than a bottom
outlet valve handle replacement, is that true?

MR. BYRNE: That's correct. And the issue with the car in Mosier was a fire attributable to puncture, I believe.

MR. SAXTON: Well, Hal, could probably help there too, but that's how we believe the initial loss of product occurred, with a coupling puncture.

MEMBER SUMWALT: And we're not here to get into the FRA's investigation of that, but let's discuss the specs for those cars. They were jacketed 1232s?

MR. SAXTON: Yes.

MEMBER SUMWALT: And so they had -- did they have 7/16 or 1/2-inch?

MR. SAXTON: 7/16.

MEMBER SUMWALT: 7/16 and they were jacketed with an 11-gauge jacket.

MR. SAXTON: Yes, sir.

MEMBER SUMWALT: No thermal insulation.

MR. SAXTON: Just fiberglass insulation, no ceramic.

MEMBER SUMWALT: Yes, so there's the difference between insulation and thermal protection. So really, to make that car -- you could legally just put a new bottom outlet valve on there and be in compliance with the regulations, but it doesn't have
MR. SAXTON: Rob, I saw you raise --

MR. BENEDICT: There's actually two
differences for the enhancement from a CPC-1232
jacketed to the DOT-117R, and that's the bottom outlet,
but also the pressure relief valve, you have to change
that out as well.

MEMBER SUMWALT: But as far as the vessel
itself --

MR. BENEDICT: Yes.

MEMBER SUMWALT: -- you're still having a
7/16 shell, which is okay on a retrofit, you can keep
the 7/16 shell because you can't increase the shell
thickness economically, and it still has the jacket,
but what we're missing is the thermal blanket, and
isn't that a key part of protecting against the pool
fire for 100 minutes.

MR. SAXTON: A couple thoughts I'd like to
put on, or put out, one is, a lot of the 1232 cars
probably do have a properly sized valve. I think the
ones at Mosier did, I won't swear to it. The other
thing to know is the result in the Oregon derailment
was, there were no thermal tears. It seems to confirm
that we might not need that. I'm not saying that. I'm
looking at a big smile I'm getting from Karl, because
RSI has this question in front of FRA, what is the interpretation? FAST doesn't tell us what to do here. It's not prescribed.

MR. BYRNE: Yes, the FAST only tells us that we don't need to install a thermal blanket unless you're jacketing the car. It doesn't really go back to the existing jacketed cars and that's the issue for us.

MR. SAXTON: We're trying to figure it out.

MEMBER SUMWALT: Because I read in our recommendation letter that was issued yesterday, let me find it, you know, you can never find something when you're looking for it, but the bottom-line is, is that, there was a study done that showed that the risk of a pool fire thermal rupture was almost non-existent with a blanketed -- with a thermal blanket car, and that was somewhere in this recommendation right here, so thank you, Paul.

The AAR stated that the RSI tank car safety project modeled the survivability of different tank car configurations in a pool fire using the analysis of fire effects on tank car model which showed that the use of thermal blankets on flammable liquid -- I'm sorry, on flammable liquid tank cars results in tank cars withstanding pool fires for hours, or in some situations, indefinitely, without product release,
except for the thermal relief device.

So I mean, to me, that says it pretty well.

That builds a pretty strong case for the value of the thermal blanket.

MR. BYRNE: It certainly indicates that a thermal blanket might be better, okay, but in our own modeling, the fiberglass insulation system met the federal requirement for thermal protection.

MEMBER SUMWALT: But in reality, in the fiberglass situation, doesn't the fiberglass all just melt, and so when we talk about fiberglass, we're talking about thermal insulation, which is designed to keep the product --

MR. BYRNE: Reduces the heat transfer into the tank.

MEMBER SUMWALT: It does reduce it, but doesn't it also melt and it'll all end up pooling down at the bottom of the -- in the void between the blanket and the shell?

MR. BYRNE: Basically, yes, but at the same time, that whole system acts as a thermal protection system in that it meets the 100-minute requirement based on the federal law.

MEMBER SUMWALT: Okay. Thanks. So it meets the requirements. Please, David.
MR. WILLAUER: In a presentation that Phani Raj gave us at the crude oil subcommittee, Phani also pointed out that the product itself in the tank car insulates it from the fire as well.

MEMBER SUMWALT: Right. It acts as a heatsink, basically.

MR. WILLAUER: Right. And the heat at the top of the car is the issue, where it thins out and can rupture, but the bottom of the cars sometimes still have the paint on them because they're protected by the product.

MEMBER SUMWALT: Thank you so much. Karl, you wanted to jump in on this?

MR. ALEXY: Okay. I'll start with Mosier, and I agree, Greg, I mean, that -- and all of you guys over there, you're looking at Mosier as being a potential -- it suggests that, you know, just the jacket acts as a nice heat shield, that it works well, but, you know, we look at this as a whole system. So those cars were a little bit more robust, fewer punctured, you only had 30,000 gallons, not even 30,000 gallons, on the ground that only burned for a short time, and I don't know that there was any total engulfment of the car in a pool fire. That's one thing.
And we are, you know, looking at your requests. Our concern is, how do we model -- you know AFTAC can handle a single component, maybe two component, lading, so what do we do -- you know, what do we do with this multi-component? How many components are in crude oil? Dozens? Hundreds?

And what are those properties that we're modeling in the AFTAC model? So this is an important step forward for us. This approval sets a precedent not only in how we look at that, but also, you know, if we're going to allow, simply, a jacket, or for all intents and purposes we're saying a jacket becomes a thermal protection system, that is something that we have to be very, very careful on, and we're taking our time in evaluating.

You guys have done some really good work and we're just making sure we run all these issues to the ground.

MEMBER SUMWALT: Excellent. Thank you.

MR. BYRNE: Could I just make one comment?

MEMBER SUMWALT: I would you would. Thanks, John.

MR. BYRNE: With respect to the outcome of this. Okay? This is important to us because of the volume of jacketed CPC-1232 cars. And it's going to
make a huge difference in terms of logistics of the retrofit, because, you know, if we get approval for fiberglass as a thermal protection system, we're looking at, like you say, 20 hours to, basically, convert those cars to 117Rs.

If we have to remove the jackets and install a thermal blanket, well, that's going to, basically, limit the number of shops that can do the work and it's also going to affect, you know, the timeline to get it done, because we're talking about hundreds of hours now.

MEMBER SUMWALT: So thermal blanket, to be clear, that's, basically, a 1/2-inch of ceramic, basically, is that --

MR. BYRNE: Right.

MEMBER SUMWALT: Okay. And can we achieve thermal insulation -- excuse me, thermal protection through other means? Have we seen other means or is that pretty much the only way of doing it so far?

MR. BYRNE: Right now, it's a thermal blanket, isn't it, Karl?

MR. ALEXY: Yes. Well, there's different systems. You're, there's a number of different systems that have been proved as thermal protection systems.

MEMBER SUMWALT: Thanks. One thing I want
to know is, what's the difference between a pool fire and a torch fire? So one can withstand torch fire for 100 minutes, according to the regulations, torch fire for 30 minutes, so what's the difference?

MR. ALEXY: So the regs define a pool fire — so it's total engulfment. So the entire surface area of that tank is impinged on by a fire at a certain temperature. The torch fire is a more -- you know, it's more directed. It's not nearly as large and it also has a specific temperature as well, so it's just a difference of the overall -- well, difference in the coverage of the tank and the temperature of the fire.

MEMBER SUMWALT: Thanks. Ken?

MR. DORSEY: Generally speaking, when you run the models that we have, the torch fire does not tend to be the event that fails the car. It's the pool fire that fails the car. Torch fire, the car is able to act as a heatsink much more efficiently, so we're more concerned with the pool fire performance, although, we don't ignore torch fires.

MEMBER SUMWALT: Thanks. Could a torch fire occur due to product coming out of a pressure relief valve? You might have answered that and I was looking at another question.

MR. DORSEY: Yes, I believe Paul, actually,
Cherry Valley, I believe, had one situation where the impingement on the tank simulated, say, a torch fire. I believe that's the only failure I know of, but that's the only one I can think of and you'd be the one to know.

MR. STANCIL: We did not cite that in our report. You know, we did not note any evidence of a torch fire at Cherry Valley. I'm not sure if that was another accident.

MEMBER SUMWALT: David, I want to ask you about the Cambridge report. I saw a good PowerPoint that you all put together as well as your actual paper. In 2005, you authored a report on the analysis of tank car fleet options for retrofitting the capacity, and you identified three interrelated issues for achieving a safer fleet, shop capacity to perform the retrofits, new car manufacturing capacity, the fleet composition, and projected retirements.

You stated that at the time the known capacity of the contract tank cars shops was significantly underreported, the retrofit process for the entire fleet of crude oil and ethanol could be accomplished in six years, not ten years, as another report might have indicated, and the most risky unjacketed tank cars should be addressed first because
they have higher probability of release in an accident.

So how has this changed, or has it changed, since that report? I think it was in March of last year.

MR. AEPPLI: Let me answer that. I think everybody knows here things have changed quite a bit. And even while we were working on the report, we already saw the substantial decline in crude oil prices and the changing logistics patterns coming out of Bakken in particular.

So I think from looking at it from a perspective of the contract shops, that market, they saw that market start to turn, and a number of major projects that were either announced or in development were stopped, and particularly among the shops that were not in the manufacturing side of cars were really taking a very close second look at it.

And so at this point, you know, the contract shop manufacturing capacity, or retrofit capacity, is much smaller than, I think, anybody anticipated a year ago. Not surprisingly. We've only seen, maybe, 1000 retrofits being done in the last year. And looking ahead, you've got a couple issues. You've got, you know, to buildup capacity, you've got to do two things. You've got to have the infrastructure there to do it
and then you also have to have the workforce that can
do the work.

And both of those, and in particular, the
workforce development, is a big issue for contract shop
industry, and given that the demand is, for that kind
of work, currently not there, it would take quite a
while to ramp up if that demand were to happen.

At the same time, you also have a situation
where, looking at the demographics of the tank car
fleet, you've got a substantial increase in tank car
requalification coming along, starting next year, that
will keep contract shops very busy with that line of
business. And that was something that was also
identified both in the Brattle and our report as well,
but that is, you know, where the focus is on that
industry.

Now, when you get to the retrofit question,
if there is major demand, I think that demand would
more likely be fulfilled on the manufacturing side than
on the traditional contract shop.

MEMBER SUMWALT: Thank you very much. And,
Kevin, you authored -- the Brattle Group authored a
report about the same time to comment on the proposed
rule, the NPR for what became HM-251, and a lot of this
has changed. I mean, it may be moot at this point
because now you're not commenting on a proposed rule, the rule is out there, so it is what it is, but has anything significant changed in your mind when you -- I think your report offered suggestions or predictions on how long it would take to upgrade the fleet.

But there again, we've heard now that the capacity, they can meet the demand, but anything you'd like to add since your report?

DR. NEELS: Well, I think we've been talking about a lot of the issues here. The oil market has changed. Production is down in the Bakken. The pipeline capacity is up, so I think the size of the fleet that is going to be required to handle this over the long term is lower than people were thinking about when the rule was under consideration. So that means, in some sense, the nut's gotten smaller.

I think some of it we've already heard. Some of these cars are being retired and they'll be retired rather than retrofit. And I think also for that reason, given the changes in the economics of the market, I think some of the people who were thinking about tooling up for retrofit are taking a fresh look at the economics, as Andreas said, so probably we're not seeing the capacity that we thought we were going to see, but then the problem's also going to be, I
think, smaller than we thought it was going to be.

MEMBER SUMWALT: And again, the folks that are producing the tank cars and retrofitting them, I mean, they've said now that they know what the deadlines are, they can meet them. So, Ray, I'd like to come to you for a second. In the case of leased equipment, who responsible for planning, scheduling, and the changeout of the retrofitted cars?

MR. MORGAN: So I'm sorry, let me make sure I understand the question. You said leased cars.

MEMBER SUMWALT: Yes. In the case of the leasing equipment, who is responsible for scheduling, planning, and changeout?

MR. MORGAN: So with respect to the leases, I'm not going to address that specifically, we'll leave that to the leasing companies, but it's a collaborative effort between the facility that's doing the work, and the company, and other parties that would be involved in those activities, whether it be engineering and et cetera.

MR. STANCIL: Will the leaser or the leasor be responsible for doing that work?

MR. MORGAN: Okay. So I think Greg may have touched on that question a little bit earlier, but typically, it's the car owner, the equipment owner,
that's responsible for that. Now, there could be some
arrangement that's different than that for a particular
lease, but typically, it's the car owner.

MEMBER SUMWALT: Thanks. Bob?

MR. HULICK: This might be a good point to
talk about, you know, this relationship is somewhat
complex and at the end of the day, the shipper is
responsible for the proper packaging of whatever
they're going to ship. The shipper is also who decides
what type of cars they want in their fleet and how many
cars they want in their fleet.

And the roll of a tank car owner, when it
comes to modification of a car, it's not solely the
tank car owner's decision in the lease market. This is
something we have a continuous communication with our
lessees, and we talk about what their demands are, we
advise them, the status of the cars that are in their
fleet, and the regulatory requirements so that we can
be in compliance as we move forward.

But it's not any one party that makes that
decision unilaterally. That is something that's
discussed amongst the parties. If I might just also
talk, just for a second, about, you know, the market,
and, you know, I mean, we talk about capacity, but
really, you know, the market drives capacity, and I go
back to the comments about new tank car manufacturing and how that's responded to the market, and I think you see the same thing when it comes to a retrofit capacity.

And I think if you look at being able to retrofit a tank car, there's a number of steps that have to occur. John went through the steps of the physical activity, but prior to that going on, I can speak for our company, what we've done is a detailed engineering analysis of the variety of car types that you've seen up here to develop a retrofit package for those cars. What is necessary to be done? All the necessary engineering work.

Once that is done, we've gone forward and we've done prototypes of the different configurations, well in advance of even the rulemakings, to be prepared. Then once you've done that, you need to submit those for approval at the Association of American Railroads.

They, you know, are, you know, essentially, the reviewing faction that takes care of that on behalf of the FRA and Transport Canada. Once you have that approval, then you could go into production and make the modifications, and if you have that approval, you can release those cars into service. So, you know, as
a company, we've gone through all those steps, up
trough production quantities, of some of the
modification types.

    All this has to come forward and be done
before you even talk about capacity.

    MEMBER SUMWALT: Excellent. Thank you.
We're about ten minutes before the end of this session,
so Mike is going to go through, and if you've got
questions, submit to him, and one thing I want to say
too is, I've been calling on specific people, but I
think you've kind of picked up on this, but if you've
got something to say, we do want to hear from you.

    So I don't mean to say that, you know, we
don't -- if I ask Ben a question, that doesn't mean I
don't want Denford to jump in there, so I mean, I think
you all are doing great, but please don't think I'm
trying to exclude you. So I think the open dialog is
good.

    So, Ken, I want to ask you a question. So
let me see if I've got this right. So in HM-251, it
did not require an upgrade for the top fittings on the
tank cars, for the legacy tank cars, I believe, but
then in the FAST Act, it came along and did require the
upgrade for the top fittings, I believe, or maybe it's
the top fitting protection of the housing.
So what concerns are there for retrofitting the legacy cars with the more robust top fitting protective housings?

MR. DORSEY: Well, we worked very diligently and one of the things, of course, you have to worry about is actually the strength of the top of the car as well, but we worked as well as we could to protect the valves. The retrofit top fittings protection would be very similar to a, if you want to call it that, legacy pressure car protective scheme, and it was achievable within a retrofit situation for these shops that have to do the work.

MEMBER SUMWALT: And I didn't climb on the top of the tank car to look at it, but some of these guys did, I think that's a 1/2-inch of cast iron, or something like that?

MR. DORSEY: Not cast iron.

MEMBER SUMWALT: Not cast iron.

MR. DORSEY: It would be some kind of a ductile steel, but yes, it's about a 1/2-inch.

MEMBER SUMWALT: Has anybody successfully -- has anybody upgraded the top fitting housing on the legacy cars?

MR. HULICK: We've applied the required fitting protection on cars based on the DOT-117R
MEMBER SUMWALT: Thanks so much.

MR. HULICK: And again, that is necessary to get the approval so that we could produce those cars and have them released to service.

MEMBER SUMWALT: Great. Thanks. Let me ask a question, not asking anyone to reveal competitive pricing information, but just in a general sense, what are the relative cost of retrofitting versus a cost of building a new 117 car? Just in a general sense, or if that's not a question you're comfortable answering due to proprietary reasons, then that's okay too.

MR. KLOSTER: Maybe I should take that since I don't have a dog in this hunt. So it all depends on what car you're starting with. So if you start with the worst car, the car that's going to have the most expense, you're obviously going to be with a legacy ethanol, you know, DOT-111 car that's, you know, 263 and non-insulated, non-jacketed car, and so the cost to jacket that car, with all the work required, is probably between $30,000 and $35,000.

Then you're going to have to go a 286 because you're adding a lot of weight to the car, so you want to be able -- now, the shell capacity doesn't change, but the weight of the car does, which means
you're not going to be able to fully load them as much
so you need to go to 286 to get that weight back, so
now you'll be able to fully load that 30,000-gallon
car, but that retrucking that's been referred to before
is probably close to, well, at least 20, depending on
what your leverage is with the suppliers of those
components, but probably between $20,000 and $25,000.

And then all the rest of the things you do
are probably going to be, you know, $10,000 to $15,000.
So, you know, back two years ago when the comments were
going on and we did all the research for this, you
know, we were coming up with numbers that were low 70s
to mid 70s, so $72,000 to $75,000.

My understanding today is -- and that's all,
you know, projected, but now that we have people
actually doing it, and there are DOT-111 legacy cars
that are being retrofitted right now, not huge, huge
numbers, but they are, and the cost is probably
between, you know, $65,000 and $70,000, which is what's
expected, you know, because, you know, when the rubber
hits the road and people actually start quoting, you
know, the numbers start to get more realistic.

MEMBER SUMWALT: And that's just to
retrofit. Not in those figures are the fact that you
had to go out and buy the tank car a few years earlier.
MR. KLOSTER: Well, and that's an issue because when were these cars built? They were built in, you know, the mid-2000s and these cars were built to last 50 years. Leasing companies generally depreciate their tank cars over 30 years down to a scrap residual, so easy math. If you had a $100,000 car, and you depreciate over 30 years down to a $10,000 scrap residual, you've got -- you know, and you're ten years into that car, you still have $60,000 worth of that car on the books, that if you replace it with a new car, that has to be dealt with.

So now you've got a $60,000 event called writing it down, but then you have to replace it with a new car, which, at the height, were above, in the 140s and 150s, even projected for 117s, into the 160s, which I don't know what the exact cost is right now, but it's still well above $130,000, so now you've got close to a $200,000 event, buy the new one, write down the old one, and so that's why, when you look at it, you say, you know, you're doing the analysis, the fleet owner, whether it's a leasing company or a shipper-owned car, the retrofit is always going to win economically because you're preserving that asset.

The problem is, is that, that decision is not made purely on economic factors, particularly with
the shipper. Even if they're leasing the car, the
shipper is still going to go through, you know, the
beneficial owner of the commodity, okay? He's still
going to ask the question, what version of that car do
I want to move my commodity in? And so the risk people
are going to become involved.

And when you start to add -- you know,
that's qualitative down to quantitative, and they end
up putting a number on that, and when you look at the
risk of being -- you know, having that event, and being
involved in it versus, you know, paying a little more
for a car, whether you're leasing it or buying it, you
know, yourselves, and you're a shipper, that's still
the decision process that most shippers go through, and
I think more than not, are ending up on the side of,
I'm going to go to the 117J because the last thing I
want to do if I'm ever in an event and I'm in a
litigious situation and the opposing side says, so tell
me again why you chose that 117R and not the new car,
and your only good answer is to save a little money,
that's not going to fly.

MEMBER SUMWALT: You should be a new tank
car salesman. But let me ask you this. So does, when
we retrofit a car, that extend the legal life of that
car? I think a tank car is limited by regulation to 40
years?

MR. KLOSTER: No, it's -- well, every car built today is automatically a 50-year car.

MEMBER SUMWALT: Fifty years.

MR. KLOSTER: That whole Rule 88, get the extra ten years thing, died two years ago. So, you know, if you retrofit a car, you're still stuck that original -- you know, there is a mechanism to go beyond 50, but that's not going to be applicable in the tank car world.

MEMBER SUMWALT: Got you. Good. Any other comments on that?

MR. AEPPLI: I just want to make a comment on the longevity of tank cars. They generally don't make 50 years anyhow, at least in the product that they were designed for, in contrast to a lot of other fleets.

MEMBER SUMWALT: Thank you. Any other comments on that? Great. So this is from the audience? Okay. I'll just read it the way it is. I'm not trying to process it. What would we consider -- why would we consider any variants for thermal protection? The 1/2-inch insulating blanket clearly needs -- is clearly needed for safety, even on the CPC-1232 jacketed cars. You want me to read that again?
Is the question clear?

Why would we consider any variants for the thermal protection? It's there for safety reasons. I think that's the long and the short of it, and I think we've kind of already heard some answers on that, but let's just closeout on that one. John?

MR. BYRNE: We would consider it, basically, because it meets the federal standard for thermal protection the way it is, and there's a significant cost to removing a jacket and installing a thermal blanket for an incremental thermal protection benefit.

MR. KLOSTER: So there's a difference between insulation and thermal protection. Insulation is to keep the heat in, thermal protection is to keep the heat out. Insulation is the decision that's made by the user of the car, the shipper, because of what commodity he has.

Insulation, I think, has been found, and I'm not an engineer, but I work with a lot of them, to John's point, to provide, you know, sufficient thermal properties based on, you know, what the rules are, right? So the issue here is not on new cars, it's not on retrofitting cars that never had insulation, it's what do you do with the cars, basically, the CPC-1232s, that were jacketed and had insulation?
If you have to take that jacket off and put thermal protection on, you might as well go back to your legacy ethanol car cost of, you know, $70,000-plus or almost $70,000. Now, this goes back to Karl's point about, this is a system, okay, so it's not just the insulation. It's also the safety relief valve, it's also the -- the other one, a mental block.

It's basically the two different, you know, valves, and as a system, and what it's intended to do as a system is to prevent a BLEVE, to prevent a catastrophic explosion, to lengthen the time before you buildup the pressure in the car until that happens so that the first responders can get there and do what they need to do.

So at the end of the day, you can affect the thermal properties of the car through those other two means, the safety relief valve and the pressure relief valve. Thank you.

MEMBER SUMWALT: Thank you very much.

MR. ALEXY: If I can just point out one thing. You know, I can tell you that we will not approve this as a thermal protection system. There's a specific requirement for that, right? It has to prevent that wall temperature from meeting 800 degrees. If you guys want to run the test and do that, I mean,
these are important things. These are subtleties and 
now's not the time to get into them, but it's very 
clearly defined what a thermal protection system is. 

What we're talking about is a special 
approval to allow these cars -- to recognize these cars 
as having met the performance standard in a pool fire. 

MEMBER SUMWALT: We're going to closeout 
here, but I want to go out and just say something from 
a personal point of view, I've been at the board for 
ten years and I'm not always very optimistic about how 
quickly rules can be formed, final rules, you know, for 
a good reason, there's a very specified and 
bureaucratic process, and it's usually we are saying 
that the regulators should do something, and then when 
they don't, we say they didn't, then we tell them about 
it. 

But I think that this HM-251, from a 
regulatory point of view, is a success story in terms 
of timing and content. You know, the notice of 
proposed rulemaking, I think, opened up, I think, 
avoid October the 1st of '14, and the final rule was 
issued May the 8th, so what is that? Five, six, seven, 
eight, eight months later. They had to go through 3200 
comments, the response, they have to respond, as you 
know, to each of the comments in a general form, and
it's over 100 pages in length.

And, you know, I've seen -- I have seen NPR final rules get held up in the Office of Secretary of Transportation and OMB for, literally, three years. Literally. We had a helicopter rule come out two and a half years ago. It spent three years just in some bureaucratic review process. You guys, thank you for your hard work. I just wanted to say that from a personal perspective.

Let's take a break for lunch. We'll be back at 1:15. Be careful on the one-way steps out there.

Thank you.

(Whereupon, the above-entitled matter went off the record at 12:02 p.m. and resumed at 1:17 p.m.)

MEMBER SUMWALT: Welcome back. Couple of things. First, thanks for coming back after lunch. I think we've had a great session this morning and hopefully you feel that good information has been exchanged. Couple of things. Housekeeping. There are surveys in the back of your folders, basically, evaluation forms, so if you would, when you leave, just leave them on the table up there. We would love to hear your thoughts about this.

This is only -- a roundtable like this is a unique event. Nicholas, is this really only the second
fully dedicated roundtable we've had? We had one a little over a year ago on distractions and transportation, and so we would love to know what we can do differently, and what you liked, and also, for those of you in the in-person audience, there's surveys out there as well, so we would love to get your comments too.

Another thing, just so you can start thinking about this, at the beginning of the next panel, the one after this one, one question I'm going to do is get everybody to go around the room and say what is the one thing you want to see done to make a difference in the shipment of -- the safe shipment of flammable liquids by rail? And so at the beginning of the next panel, the fifth panel, we'll just go around the room and ask your thoughts.

Just wanted to kind of give you a little bit of advance notice of that so you could think about that for a second. So let's do a few cleansups from -- a few cleanup questions. We've gotten some from the audience, both the Internet audience and the in-person audience, and here's one that -- well, go ahead, Paul.

MR. STANCIL: So I'll read a couple that we've gotten here just at the end of the last panel. Thermal protection systems approved by 49 CFR 179.18(c)
must demonstrate the ability of the system to maintain backplate temperatures below 800 degrees Fahrenheit throughout a 100-minute pool fire and a 30-minute torch fire under Appendix B test methodology. Will DOT consider favorably on the AAR tank car committee recommendation to PHMSA to lower the backplate temperature to 550 degrees Fahrenheit?

MR. MAJORS: We have considered lowering the backplate temperature to what was recommended, however, we feel like that would create, you know, a different standard for flammable liquid cars versus other materials which require thermal protection, so we kind of want to look at it globally before we make that decision.

MR. STANCIL: Anyone else want to weigh-in on that? Okay. The next question, this comes from one of the railroads, Class-I railroads, we are not seeing an increase of CPC-1232 cars and ethanol as there were 3790 used in 2015 and only 3178 used in Q1 of 2016. Shouldn't a lot more of the 1232 cars be quickly switched over to ethanol? And he notes that these could potentially replace many of the DOT-111 legacy cars.

MR. KLOSTER: I can maybe sound off on that a little bit. So yes, we have these big fleets, but
they're the sum of a lot of leases and a lot of
ownerships by ethanol companies, and I think, given the
fact that the implementation date for ethanol is so far
out in the future, the ethanol companies are going to
leverage that imbalance, you know, more cars than are
needed from an economic standpoint, and I think,
generally, a lease rate for a 111 versus a 1232,
there's going to be a difference.

So then it's going to get into, you know,
more of a risk decision at the shipper, what do I buy,
what do I lease? And if they feel that, you know, the
extra economics that they have to, you know, build in
for a CPC are worth it, they will, but the timing, you
know, you don't go and just, I need 1000 ethanol cars
and my leases are spread out over the next five years.
You don't go and -- you can't just give those cars back
and upgrade to the 1232s. You've got to wait for the
expirations.

And so given also that the 1232s didn't
start to get built until, you know, 2012, and
generally, those leases were, you know, five, you know,
years or so, we haven't started to see the return wave,
you know, back to the leasing companies that, you know,
we will see in the future.

So yes, there are surplus cars, but they're
cars that are on lease that they just don't need and they're from crude, say, and they're just sitting in storage, but they're still, you know, "spoken for" from a lessee perspective. So I see that building over time, but it's just early on right now.

MEMBER SUMWALT: Excellent point.

MR. SAXTON: And, Paul, if I can add one thing to that. I agree with everything he said, but also, for reasons we talked about earlier about, those crude cars are not optimal for ethanol, and that's an issue.

MEMBER SUMWALT: Okay. When you say, not optimal for ethanol, how do you mean, that once they've been used, they cannot be used for ethanol?

MR. SAXTON: Well, volumetrically, because the density is a little bit different between these two commodities, they are not the car you want to maximize the amount of ethanol you can move per carload. Fair enough? Kelly?

MS. DAVIS: Which car are you talking about?

MR. SAXTON: If you're moving crude into -- a car that was optimized originally for crude, it may not be the right size, the most ideal size, for ethanol.

MS. DAVIS: Are we talking the 1232 car or
the legacy DOT-111s? Yes, the 1232s, right?

   MR. SAXTON: Yes.

   MR. STANCIL: So the point was, they weren't seeing a corresponding increase in the use of CPC-1232 cars with the removal of DOT-111s.

   MS. DAVIS: I do believe that Richard spoke to the root of the cause and I think you will see more of the switchover as leases come due. And generally, an ethanol producer doesn't have, you know, one lease for his whole fleet. It's not all at once. There's a strategy to the way you lease the cars and the timing.

   DR. NEELS: Can you explain what is it about the 1232 cars that makes them unsuited for ethanol service?

   MS. DAVIS: I would like that explained too. I don't have anything on that.

   MR. SAXTON: Well, I don't call them unsuitable, but the density is a little different between ethanol --

   MS. DAVIS: We have a light liquid. Our product weighs, typically, about, you know, 6.7 pounds per gallon, or so.

   MR. SAXTON: So in some cases, you won't be able to fully load that car to 286.

   MS. DAVIS: That's why I was asking you the
tare weights and stuff. I don't know the tare weights on a 1232. That's the type of --

MR. SAXTON: I'm not saying that's always the case, but it will be the case for some of these cars.

MR. KLOSTER: So a little context on -- so if you're a shipper, it's a little bit different for leasing companies, but if you're a shipper of, say, ethanol, you know, the builders, Greenbrier or Trinity, whoever, they don't just have one car design, one large GP design, they have several. And those cars have slightly different specifications for the commodity that the buyer of the car wants to use.

So, you know, an ethanol producer is going to buy a car that's optimal for ethanol, even though crude might be slightly different and could be used, but to Greg's point, not 100 percent transfer. A leasing company will look at it, if they're buying a car specifically for someone they already have a lease for, they may spec it out that way, or they may spec it so it can go both ways.

And a great example of that is that, when the Bakken came -- you know, started to grow and we started building cars that were non-coil down insulated, almost just like the ethanol cars, but then
the heavy crude out of Canada, which was about two years later from a build cycle, started up, and those cars needed coils and insulation.

So a lot of the leasing companies looked at it and said, well, wait a minute, if I build that non-coiled, non-insulated car in Bakken, I can't market it up in Canada when I might need to, so I'll most common denominator it and build a coiled and insulated car, which, from a downside for the Bakken people, resulted in the car is heavier, so it has a little bit lower gallonage, but that's a decision that a leasing company makes because they look at their whole portfolio and they generally have a, you know, more of a portfolio mixed managed approach, so they don't want to have too many of this, too many of that, they want to have cars that have the broadest possible application.

MR. HULICK: I think there's a little confusion on the question. Was not the question about why there are fewer CPC-1232 jacketed cars in ethanol service in 2016 versus 2015? Is that --

MR. STANCIL: It didn't say jacketed car.

The question said, we are not seeing an increase of CPC-1232 cars in ethanol as there were 3790 used in 2015 and only 3178 in 2016.

MS. DAVIS: One of the things I see here is,
you need to understand that the 2015 data is probably for the whole year and the 2016 data would just be for one quarter, it's a snapshot, so I would defer to the American Association of Railroads to maybe we shouldn't be looking at these numbers to be as accurate as we think they are, you know?

So to look at that and say we're going down, it's not necessarily of a snapshot, comparing a quarter to a year might be --

MR. FRONCZAK: That's probably the explanation.

MS. DAVIS: I mean, Q1, if it was Q1 for all of the years, I think we could maybe compare apples and apples, but --

MR. STANCIL: Okay. All right. Rachael has one more from the audience.

MS. GUNARATNAM: This is regarding the length of the train. Earlier, it was noted only 1 percent of ethanol is shipped in unit trains over 100 cars. Most crude oil unit trains that have been involved in accidents are over 100 cars. Can the panel comment on train length as a potential risk factor? Could required shorter trains improve safety and keep more trains on the tracks?

MR. ALEXY: I can mention that in the
rulemaking, we looked at the distribution of the first
car derailed and trains. And when you start to look at
-- most of them happened at the front of the train,
most of the derailments happened, and then it drops off
gradually as you go back in the train.

So I mean, the risk of the longer train is,
you know, you have a derailment up front, you have more
weight pushing against the derailment, but like I said,
I think that's probably one of the larger risks that
we're looking at with that.

MR. FRONCZAK: Yes, the additional factor, I
guess, would be, if you were to say, keep the train
shorter, now you're going to have more trains, which,
you know, adds an additional level of risk, so I mean,
I'm not sure it would balance out.

MS. GUNARATNAM: I just had a follow-up
question to that, what about mingling the 117s and the
111s in one long train line, does that improve safety
by having some 117s or intermingling, that --

MR. FRONCZAK: I mean, having more 117s is
always going to improve safety, in my opinion. In
other words, those cars are going to have a less of a
chance to breach in a derailment. I don't think
there's any problem mixing 111s and 117s, but the 111s
are going to have the same probability of release that
they had, you know, before, they're just going to have, you know, a higher likelihood of rupture, and, you know, but throwing 117s in there is going to do nothing but help, in my opinion.

MR. STANCIL: Okay. Member Sumwalt.

MEMBER SUMWALT: Thank you very much. Let me -- let's see, so really, when I said that I'll ask that one question, that will actually be in our final discussion point, not in the fifth discussion, because we really have, Topic 5 is the path forward, but also the final discussion, so I'll ask that question when we get -- after the break at 3 o'clock, looking at the agenda.

I'd like to remind folks that if you're in the Internet audience you can submit questions, and Diedre's going to put it up right here. Here's the email address that you can use for submitting questions, and we are getting great response, great questions from the Internet and from those of you in the boardroom, so thank you for those great questions.

So logistically, this next panel will run until about 2:15, and then we'll switch to Topic 5. But before we do that, something that I want to clarify, Bob, in the AP, Associated Press had an article this morning, and it quoted AAR figures, and I
think it said, basically, something like 20 percent of the 50,000-some-odd tank cars have already been retrofitted, and I was wondering what the 50,000 sort of a number represented.

And so I was just -- I couldn't quite -- I was talking to somebody at lunch and I couldn't quite come up with what that 50,000 number was.

MR. FRONCZAK: Ed, do you want to comment on that? Ed Greenberg is from our communications department, so he would have had input into that.

MEMBER SUMWALT: Thanks, Ed. Come on down.

MR. GREENBERG: Bob, that was from the 19,000 plus the 31,000 from your charts; from that quarter.

MEMBER SUMWALT: The AAR handout.

MR. FRONCZAK: So that's crude and ethanol; the total fleet for crude and ethanol.

MEMBER SUMWALT: That's what I was wondering. Although, when I added them up, I got something like 47,000, or so, and that's why, in my mind, I was wondering. It's the last slide from the AAR. I think it's the very last one. And so -- actually, no, it's the one -- it's this one here.

MR. FRONCZAK: Yes, 19,710 and 31,870.

MEMBER SUMWALT: Okay. Yes, maybe it's that
one right there. I'm sorry.

MR. KLOSTER: The answer to your question is 116 out of 50,000; on your sheets.

MEMBER SUMWALT: Yes, see, if I take the 17,000 there, plus that, I get about 46,000, 47,000, 48,000, so that's why I was wondering, so when we reference that 40,000 figure, it's the ethanol and the crude oil fleet. Okay. That's fine. And I just wanted to know what we were referring to, so really, that number -- so what I read this morning, I believe, Ed, was about 20 percent of those tank cars that are used in crude or ethanol have been retrofitted -- have been upgraded one way or the other to the 117 standard; new or retrofitted.

MR. KLOSTER: I don't know if I agree with that. Just by the numbers that you've presented here. In the first quarter, during the first quarter, there 19,710 unique cars that moved crude. There were 31,870 unique cars that moved ethanol. That's where you get the 50,000. Then if you look on you see how many 117Rs were there, you see 116 in crude and 0 in ethanol.

Now, I happen to know that the companies that are doing retrofits now didn't really start to do that in earnest until right around the end of the first quarter, so today, that 116, and that 0 in ethanol,
probably a lot bigger, but I can't imagine that that number today totals more than 1000 cars. That's just my math and my perspective.

MEMBER SUMWALT: That's great. And, Ed, I am going to welcome you to jump in on there because, no, I think this is a good discussion here. Please.

MR. GREENBERG: And I should be fair, this was a discussion with a reporter and we made it clear that the 10,300 was -- those are active or available. They weren't necessarily in service, that they were active cars or available.

MR. KLOSTER: Are you including the 117J in those?

MR. FRONCZAK: Yes. I mean, it's a little bit of an apples and oranges story. In other words, there's 50,000 cars in crude oil and ethanol service actively in the first quarter of 2016, and there are a little over, you know, 10,000 DOT-117, 117Rs, that are active, okay, but not all of those cars are necessarily in crude oil or ethanol, so you're comparing apples and oranges a little bit there.

MEMBER SUMWALT: Good. Thanks for the discussion, and, Bob --

MR. HULICK: There's also, on the new tank cars that are in service, they could be constructed,
registered, numbered, and released, but have not yet
carried a load, so they're in the count, the 10,000-
some car count, but they may not yet show up in the
first quarter results for shipments, they've moving
into service. Same could be true with some number of
the modified cars.

MEMBER SUMWALT: Thank you.

MR. FRONCZAK: That's not the case here.
The 10,000 are active, there's another 1000 that are
preregistered.

MR. HULICK: But again, when I say active,
they are registered and viable assets, but they may not
yet have carried a load.

MR. KLOSTER: Which means you're not going
to capture these because I'm assuming how you got to
this number was, you looked at all the train records
and said, you know, the weigh bills and all that kind
of stuff and said, you would have to, because you need
to know what the STCC code was for crude versus
ethanol, look over that period of time and say, you
know, what were -- I mean, that's generally how I
understand, you know, Rail Inc., or you guys, do that
kind of study.

And so what Bob is saying is, you build a
car and you register it or it becomes active, it goes
into storage, it's still a car, but it's never going to hit that usage count because it never had a train message, or weigh bill, other than going from the manufacturing facility to the storage yard.

MR. HULICK: Right. But to be clear, I did not say it went into storage. It may be in transition from the manufacturing site to its first load, so it has not shown up in Train 2 as having had a load. That's the difference that I'm trying to illustrate.

MEMBER SUMWALT: Okay. Good. It's clear as mud now, but let the -- it's great to have the discussion and I would like to sort of sort it out in my own mind, but I guess I'll just have to do that offline. Bob, did you want to say one other thing before we start into this next panel; on to this next topic?

So we will now start officially into the --

MR. MORGAN: I'm sorry.

MEMBER SUMWALT: Yes, please, Greg.

MR. MORGAN: On additional small comment. That same analogy is true, although much smaller scale, of the R cars. There are R cars that are in storage today that were retrofitted.

MEMBER SUMWALT: Okay.

MR. MORGAN: So it's the same analogy,
smaller volume.

MEMBER SUMWALT: Got it. Thank you. So we'll move now to the Topic 4, which is factors influencing new tank car owner decisions to purchase the new 117 tank cars or retrofit the existing fleet. So, Andy and Bob, we've heard that some Class-I railroads are refusing new flammable liquid business unless it's transported in a 117 compliance tank car. Is there any truth to this? I'm not even sure that's legal.

MR. FRONCZAK: I am not going to take that question. I mean, there are antitrust regulations. We cannot, you know, talk at all about what our numbers do, you know, from a rate standpoint in incenting their shippers to do anything, so I'm not going to touch that.

MEMBER SUMWALT: Okay. No, thank you very much.

MR. ASH: At the risk of repeating what Bob said, yes, it's highly inappropriate for us to put words in our members' mouth.

MEMBER SUMWALT: Okay. It's probably not even legal anyway. If it's legally presented, if it's presented in a legal container, being a common carrier, the railroads have to accept it, is that true?
MR. ALEXY: That's the way I understand it.

MR. KLOSTER: Well, maybe I can take this question since, again, I don't have a dog in the hunt. So the railroads have to accept the freight because of their common carrier obligation, but does that not mean that they can't charge whatever they want to charge for that.

MEMBER SUMWALT: Right.

MR. KLOSTER: And so my understanding right now, and without, like, naming specific situations that I'm aware of, there are railroads who have said, I will still allow a flammable, say, crude or ethanol, or even the other flammables, you know, gasoline, things like that, to move in a 117R in, you know, single-car, small units, but when you get to unit train sizes, there are significant price differences in what it will cost you to ship a 117R and a 117J.

So you start reading between the lines and what you realize is, this is influencing safety and behavior through the economic realities of the marketplace.

MEMBER SUMWALT: Great. And it's a good question and a good point, and I really do want to ask that in the next panel when we start looking at innovative ways, so we might want to talk about
tariffs, for example, or investment tax credits, or
something, for upgrading, so that's a great tee-up for
that, and I thought -- so good.

And you guys answered that the way that, you
know, we said yesterday, we don't expect you to violate
any anti-trust issues or proprietary issues, so thank
you for keeping us straight there. Suzanne, we
understand that with milestones, everyone in the NTSB
has called for milestones, I think you were in the
first session, you were in the audience, and we talked
about milestones, and so we, the NTSB, have called for
milestones, we know what the dates are, the deadlines
are, and we've asked PHMSA to have milestones to sort
of check the progress of how things are going.

But without milestones, all fleet owners are
confronting uncertainty. Can you talk about or do you
have any opinions about advantages or otherwise from an
economic perspective of delaying -- well, it's kind of
an incongruent question here, so we've got -- are there
advantages from an economic perspective of delaying
upgrading to the 117 cars from the petroleum
perspective?

MS. LEMIEUX: Let me think about that for a
second.

MEMBER SUMWALT: And again, if it's anti-
trust or proprietary then just don't even go there.

MS. LEMIEUX: Yes, I mean, each member is going to make a decision based on market conditions, where they operate, what their other transportation options are, what their leasing options are, whether they own cars or they don't own cars, and so I don't think -- and it depends on your level of risk, your risk tolerance, I mean, there are a lot of factors that are going to go into that decision, so I think it's a case-by-case determination that a producer or, you know, a transporter would need to make.

MEMBER SUMWALT: Thank you.

DR. NEELS: And I could add to that, maybe a little bit, I think there's risks on the upside and the downside that -- I mean, if you postpone the upgrading decision you may find yourself without the fleet you need because it can't be legally operated in the service when the time comes. On the other hand, if you modify in advance, then there's a risk that you may have misjudged the market and wind up with spending money on cars that you're not going to need.

So that's kind of the uncertainty that everybody's trying to unravel right now.

MEMBER SUMWALT: Great point. And that's kind of what we're trying to get it, is what are the
market forces looking like for driving the tank car replacement or retrofit. Denford, I want to come to you. We understand that, certainly, Hess has a large fleet of tank cars and given that cars and unit train service are operating with significantly higher mileage than tank cars in other service, are your cars seeing more frequent maintenance, those in the crude oil business?

As I recall, it seems like I saw a figure that for ethanol, the average distance is something like 900 miles traveled and for crude oil it's something in the order of 1300 miles. Seems like I saw those figures somewhere in some report, but give or take, so are you seeing greater maintenance for the crude oil fleet?

MR. JAJA: The short answer is yes. They're putting more miles on the cars so they're going to require more maintenance, specifically, the wheels, for instance. We are seeing more maintenance on those, so yes, we are.

MEMBER SUMWALT: Thank you very much. So another big question, and I think we've already talked about some of these things, but at what point does the cost of retrofitting exceed the remaining service life benefit? Who would like to take that over here?
MR. KLOSTER: Well, if we're talking about a CPC-1232 that gets retrofitted, that, you know, was built in the mid -- you know, late 2000s, they're not that old, so there's a lot of life left in it. And I forgot who made a comment about, maybe it was Andreas, you know, we build the cars for 50 years, but they don't last that. Tank cars probably are, you know, miss that 50-year more than any other car. A lot of it's because of technological obsolescence.

Also, there are so many different varieties of tank cars, when you get down to the commodities that go in there, that also have an effect of shortening up the life. So my perspective is, is if you've got a, you know, less than ten-year-old car, and you're going to look at the economics, you know, you're not going to spread that over, you know, a 10, or a 15-year, or a 20-year remaining life. You pretty much have that full, or almost that full, 30 years of life, like you would do your economics on a new car.

Leasing companies don't do their economics on expecting that car to live 50 years. It's generally 30 years. So I don't know that it would be that big of a difference because of how young the candidate cars would be.

MEMBER SUMWALT: So maybe the driving factor
there is the age, or the youngness, of the fleet. If it's a newer tank car, there might be more advantage to retrofitting it versus if it's a very old car. Did I characterize that --

MR. KLOSTER: Well, like I said before, you know, economics are always going to beat of a retrofit, because you preserve the old car, a new car. So I think the differentiator in the decision is going to be what that particular company's attitude toward risk is and what kind of car they want to move their product in.

You know, so it will be, you know, a lot of cases where, you know, economics win all the time, but risk trumps economics in some cases.

MEMBER SUMWALT: Right. Kevin?

DR. NEELS: I think you also have to evaluate this in the context of the specific markets that these tank cars are serving. It's not just a matter of the technical lifetime of the tank car. A couple years ago, the demand for tank cars in crude oil service was exploding. I've never seen the rates, but I would imagine the rates were much better than that you got for leasing than you could get now when you have lots of cars in storage and excess demand.

So the rates that the lessors are getting
when they're being used are less. Probably the -- you
know, your ability to place them is a little iffy and
there's a question of whether the market will still be
there 20 years down the road when the tank car still,
technically, is usable.

So I think you have to -- to answer the
question, you'd have to run the numbers and think about
what the lease rate is, what's the chance you'll be
able to keep it utilized and on lease over the
remaining technical lifetime.

MEMBER SUMWALT: Thank you. Suzanne, if,
you know, with the downturn of the oil market, there
are a number of tank cars that are parked now that were
in crude oil service. Any idea why those tank cars,
since they're sitting idle, why they're not being
upgraded now? Any thoughts on that one?

MS. LEMIEUX: I think that's probably also a
function of the market. You know, if you have the
incentive to retrofit, if you think, you know,
projecting out your business, those cars are going to
be put back into service, you may make that decision
now, I think.

Obviously, in this price per barrel where
we're at today, we're not moving a lot of crude by
rail, I think the numbers that AAR has proved that out,
but, you know, those are significant investments and we see the price probably staying close to 50 for some time into 2017, so if you know you're not producing, I mean, the amount of wells, I think we went from 800-something producing wells in the U.S. to 330, so I mean, you're seeing significant -- granted, we're more efficient in our ability to produce, but again, if you're projecting out and you're not seeing those cars back in service, you're probably not going to invest in that.

But I mean, I would defer to Denford since he actually owns those cars.

MR. JAJA: I agree with what Suzanne has said, but in addition to that, and I think we made mention of it earlier on, there are alternate modes of transportation, such as pipeline, that are coming into play as well, so as a car owner, you are looking at the things that Suzanne has talked about, and you are looking at pipelines coming online, and possibly moving those barrels that are currently moved by rail into pipeline, so you're weighing all these options and trying to make the best decision.

MEMBER SUMWALT: Thanks. Any others? Yes, please.

MR. HULICK: You know, when we talk about
market and demand, I think that's certainly a critical part of, you know, what's going to prompt people to modify cars, but I think we also have to focus on, just taking crude oil as an example, there are two distinct markets in crude oil, there's the shale market and then there's the heavy crude market. I'll use those as general terms.

And there are many idle cars that came out of shale service that would not be feasible to use in heavy crude oil service, the reason being, the cars are larger because of the lighter density of the shale product, and you can't stay within the clearance requirements necessary to put the insulation, and the coils, and the jacket on those cars that would be necessary for the heavy crude oil market.

So within the modification candidates, that has to be taken into consideration. And as several of our colleagues have said today, in the shale market, we're seeing increased pipeline availability, so we're seeing decreased crude by rail, and if you look at some of the forecasts, it doesn't appear that the crude by rail in the shale market place is going to return even to 2015 levels anytime soon.

Maybe 2021, as some of the dates that I've seen, some others probably closer than I am, if you
look at possible growth in the crude market, it's probably the heavy crude, but again, not all the cars could be modified for that service, so I think we have to look at the fact that, even that growth, you know, we've got a tremendously overbuilt supply of tank cars right now, so it's going to be a selective decision as to the characteristics of the car, the cost, the demand, and the shipper's needs.

MEMBER SUMWALT: Good point. Now, for my edification, when you talk about the clearance requirements of the car, you're talking about the physical exterior dimension of the car by adding the jacket or are you talking about the increased outage that has to be there?

MR. HULICK: I'm talking about the physical clearances to stay within the prescribed plate clearances which are required. Those cars are on the edge of the plate clearance, which is appropriate, so you can get the best volume that you can. To then take that car and add, not just a ceramic fiber blanket and a jacket, but another layer to accommodate the coils that are welded to the tank and then the insulation, that puts the car outside the plate clearance.

And to your point, that car is too large anyhow to be efficient in that market based on the
density of the product.

MR. KLOSTER: It's more of a width issue, actually, because the shells of a non-cold car almost go to the edge of the envelope, and then when you add, you know, a couple inches on each side, you're outside of that.

MEMBER SUMWALT: Okay.

MR. KLOSTER: And so the only way to do that would be to, you know, taper it down, which isn't going to work, because then you're going to have a zone that doesn't have insulation, and that's going to be a heatsink, or you're going to have to just squeeze the car, which is impossible.

MEMBER SUMWALT: Okay. Good.

MR. WILLAUER: That's also known as plate C? Was that the term that was used?

MR. KLOSTER: Yes, there's Plate B, C, E, F, and even greater, from a height standpoint, but all of the plates' clearances are the same from an extreme width standpoint. It's like 10 feet 8 inches, or something like that.

MR. HULICK: And that particular Plate C width, we had a good discussion among the industry to see if there was any relief in that plate clearance, and there are a number of areas in North America where
there is no relief available, so we can't go beyond that, so we are restricted by that dimension.

One other comment on decisions, there's always the feasibility of scrapping an asset, and we've had conversations about age of assets and cost of modification, and, you know, scrap prices will dictate whether or not assets are going to be retired and cut up. And if the scrap market is not attractive, you're probably going to see those cars sit for a while before they're disposed of.

So when we get into fleet counts, there may be cars that are not going to return to service, but they're still in the count until it's more attractive.

MEMBER SUMWALT: Interesting. So Mike has passed through the audience to see if there's any questions from the audience and any other ones before we start going through those, so great, we'll catch those in just a minute. Yes, we'll jump in here. Let's see here. This one from the audience. Anything from the Internet? Nothing from the Web. Okay.

All right. Let's see, if the viability of retrofitting legacy 111s has gone away, as John Brian has stated, is it Byrne or Brian? It's Byrne. I thought so. I heard somebody pronounce it --

MR. BYRNE: And that wasn't an absolute
remark. That was directional.

MEMBER SUMWALT: Okay. Good. Thanks. So really, very little retrofitting is being done during the past five years until the CPC-1232s can be addressed. What do regulators expect fleet owners should be doing in the meantime? So, Karl, let's see here, I'll just let you read that one right there and read the question, if you will.

MR. ALEXY: Well, you know, we have the deadlines out there, so we would expect them, industry, to understand that those deadlines aren't going to be extended, that they have to -- that these are decisions they're going to have to make. If they want to hold off and wait, and the market changes, and there's a sudden demand increase, that they're going to have to be prepared to take care of that.

You know, whatever decisions they need to make from a business standpoint, this being the tank car owners and the shops as far as getting equipment and material setup, you know, that's, again, business decision from them. But ultimately, the message is, you know, the deadlines are set and we expect them, you know, beyond those deadlines, those respective cars are not put in service.

MR. BENEDICT: And kind of to reiterate
something Ben said earlier, with the, kind of, flexibility that we're seeing now because the demand has decreased, these deadlines are just deadlines. You know, we would encourage the use of the newer cars quicker, if possible, now, understanding there's leasing and other issues at play here, but, you know, the FAST Act has tied the dates to a specific time, but that doesn't mean that we can't encourage the use of the new cars faster.

MEMBER SUMWALT: Here is a question from the Internet. We're getting great questions from the audience. If the shippers used more condensate with heavy crude, couldn't they use tank cars without coils?

MR. KLOSTER: Heavy crude has to be unloaded, and it cools down, and it's like sludge, so how do you get it out? You have to heat it up. So I just -- you have to have coils. I mean, am I wrong?

MR. HULICK: It's a density, you know, question and the heavy crude, even mixed with condensate, most likely in colder climates will required steaming of the car to get it out, actually, probably in just about any climate. That's just a fact.

DR. NEELS: I believe it's the case that
they use diluents of various sorts to move it by pipeline, so I'm not sure that it's technically infeasible, but one of the problems is then, you're transporting the crude and the diluent to the destination, and the diluent has to go back because it'll be reused. So the logistics of it are complicated, assuming it's technically possible.

MR. KLOSTER: That's true. And when you're moving crude in a pipe, it's 30 percent diluent, and so in rail, it started out with the same, they had what they called, you know, dilbit, and then they had railbit, which is, I think 15, 20 percent, and there's even some talk about getting to a point where it's no bit, you know, which would be a big, you know, economic advantage if you could ship 100 percent crude uncut in a tank car relative to what your pipeline competition has to do, which is, you know, cut it, you know, 30 percent.

But I don't think that no bit technology, if you'd call it that, is really widely used yet.

DR. NEELS: Yes, and in fact, I think one of the reasons why rail has looked better from the point of view of oil sands producers is that they don't have to worry about the diluent, and that's been part of the reason why the shippers will pay the somewhat higher
cost of moving it by rail rather than by pipeline.

MEMBER SUMWALT: Thanks. So what we'll do, we'll go to the panel here. We've got a couple of questions, so kill your mics if you don't mind. Thank you. Rachael, go right ahead.

MS. GUNARATNAM: Thanks. I just had a question, Karl touched upon it, if the demand picks up, you know, the deadlines are the deadlines, Suzanne, you mentioned that they're not retrofitting right now because there isn't demand, but if the demand does pick up, how is the industry going to then be able to compensate and meet the deadline at the same time? Is there kind of a plan?

MS. LEMIEUX: I mean, from an anti-trust perspective, we don't collect any of that information from our members and we wouldn't legally be allowed to ask them what their plans are. So again, those are all going to be market-based decisions. I think our comments to the rule were pretty extensive in terms of the schedule and what we thought was appropriate in the schedule, so I think knowing now what the schedule is and, you know, companies will work with the manufacturers if they're buying tank cars or work with the leasing companies to order their cars, but I don't -- you know, in compliance with the deadlines.
And I think that's all, from an API perspective, we can really say about that. Again, it's an individual company decision and those are all restricted by anti-trust.

MR. HULICK: And further to that, I mean, there are private tank car owners who have modified tank cars and are considering more modification, so it's not that there's nothing being done. And, you know, we as a company have modified cars in our own lease fleet as well as cars for other owners, so it's not that there's no activity at all.

MS. LEMIEUX: Yes, I didn't mean to say that companies weren't. I said it was a company decision based on the market.

MR. BENEDICT: Yes, and I would just say that, you know, when we were doing our analysis for the rulemaking, we did take comments and adjusted the schedule to reflect the comments, but ultimately, we were looking at a mixture of new cars and retrofitted cars to meet the demand, and what we've seen is actually more production in new cars than we thought.

So, yes, if that changes because the demand changes, we'll see, but, you know, as Bob said earlier, we're kind of on a good pace to meet that first deadline.
MEMBER SUMWALT: John, I believe you wanted
to have a question.

MR. VORDERBRUEGGEN: Mine is more of an
observation than a question. It appears that the oil
producers have a heck of a challenge in front of them.
They're dealing with prices just going all over the
place and hopefully it's stabilizing, so that's one big
impact for the producers. And, Gabe, you probably --
this probably -- you probably lose sleep over this, the
price of oil is so -- in such a state of flux.

And the other things is, for transporting
your product, the rail industry is declining as the
pipeline availability comes onboard, whereas, in the
ethanol arena, things are relatively stable price-wise,
maybe relatively flat production-wise, but you don't
have the challenge of how do I adapt for pipeline
displacing rail.

So I know if I had to be on one of those two
sides, I think I know which side I'd be on to try to do
these analyses.

MEMBER SUMWALT: Great. I know we're not
scheduled for a break, but I don't think anybody's
going to argue with us taking ten minutes, given that
it's after lunch, so by that clock, let's be back at
2:15 and we'll start with Panel 5. Thank you.
(Whereupon, the above-entitled matter went
off the record at 2:04 p.m. and resumed at 2:16 p.m.)

MEMBER SUMWALT: Bob, I don't want to open
up a can of worms, during the break I was thinking
about this, really, I think at the NTSB, we would be
very interested in knowing, percentage-wise, how things
are coming in the upgrade, and we even had a
recommendation to PHMSA, I think, and I think that Paul
will address that in a little while, you know, from
milestones so that we could say like, well, 20 percent
of the fleet is done each year, or something like that.

And when I say -- it depends on how you cut
the figures, whether you're looking at the tank cars
that are produced, but not in service, and things like
that, and I don't mean this in the nefarious sense, but
depending on how you cut the figures it's like a shell
game almost, that well, this number is out there, but
only this number being in use, and I don't mean that in
an unkind manner, but would you be willing to just meet
with our staff sometime and just try to help us
understand what those percentages are?

MR. FRONCZAK: Yes, absolutely. I mean, we
work very closely with the RSI making sure we got these
numbers right, and there is a lot of data that is in
the slides that I provided you all with. And you may
or may not understand the nuances to it all, so yes, we're willing to talk through that.

MEMBER SUMWALT: Well, thanks. And to your credit, you prepared these great slides, and you were prepared to show them, and I said, no, we really don't want those, so maybe the onus is on us to digest them, and then if we have questions, just go to you, but the conversation we had at the beginning of the last session, I kind of left thinking, well, I'm not even sure where we stand with the total upgrade, so I was just -- but it is in the data that you've provided, I guess.

Okay. Good. Thank you. So what we're going to do now is go to the last panel, and I'll ask Diedre to show the Web address one more time. If you want to email in questions, here it is here, railtankcarsafety@ntsb.gov. Thank you. If you're in the Internet land, not playing Pokemon, you can email questions, whatever Pokemon is.

Panel 5, the path forward to implement the new tank car safety standards. And so, Manuel, would you be willing to tell us about the status of recommendations from the TSB concerning Lac-Megantic and other recent accidents?

MR. KOTCHOUNIAN: Sure. Thank you, Member
Sumwalt. For us, as you know, following the tragic events of Lac-Megantic three years ago, we issued a series of recommendations to improve the transportation of flammable liquids by rail, including a recommendation to improve the robustness of the DOT-111 tank cars.

TSB has accepted all of the recommendations and has taken a number of safety measures. For tank car safety, TC published a rule in May 2015 that established the new TC-117 standard. That will effect provisions for older tank cars and implantation timelines to modernize the fleet. These are generally harmonized with the PHMSA standard and require a number of enhancements to the tank cars used for flammable liquids.

TC also committed to fully enforce the phase-out timelines if required. The TSB has evaluated the response and gave it a satisfactory intent quote and the recommendation remains open while we monitor the progress. I would also like to point out that the transport of flammable liquids by rail is on our watch list and which is something that we continuously monitor, and we remain of the view that the sooner the older tank cars are phased out, the better it is for safety.
With respect to the latest accidents that are currently still under investigation, what I could say is that, like I mentioned earlier in the opening slides, in the two Gogama accidents, there were 68 CPC-1232 cars that derailed, 6 of them were jacketed and insulated. There were -- I'm giving general numbers here, there was about 22 cars that sustained a thermal tear in those two accidents.

While none of the jacketed CPC-1232 cars did sustain a thermal tear in these accidents, there is not enough data to be able to draw any conclusion on their fire survivability. Some of these cars had other breaches and some of them that were not breached did not necessarily sustain a fire that would have caused a thermal tear.

So in summary, Member Sumwalt, that's what I can say.

MEMBER SUMWALT: I really appreciate that. Thank you for that summary. And so now, Paul, I know that before the lunch break, I mentioned that I thought I was impressed with the rulemaking effort in terms of the length of time that it took to get it done, but, Paul, what have we called for that we would like to see more work on?

MR. STANCIL: Yes, so there is one
recommendation in particular which sort of comes right to the point of this roundtable discussion, and that recommendation came out of the Mount Carbon, West Virginia investigation from the February 2015 accident in Mount Carbon, West Virginia. We issued Recommendation R-15-16, which urged PHMSA to require an aggressive intermediate progress milestone schedule, and we gave an example, such as 20 percent yearly completion metric over a five-year implementation period. Some people took that literally, but that was just a suggestion.

For the replacement or retrofitting of legacy 111s, DOT-111s, and CPC-1232 tank cars to an appropriate tank car performance standard, that includes equipping those cars with jackets, thermal protection, and appropriately sized pressure relief devices.

And although we would have preferred a more aggressive schedule than the 10 years, or 13 years, for full implementation that's provided in HM-251 and the FAST Act, we understand that the deadlines were based on analysis of shop capacity, and logistics, and are closely aligned with those of Transport Canada.

So we continue to stress the need for a more timely and documented replacement of these less-safe
tank cars, and in the absence of mandated implementation milestones, which is, we believe, key, the scheduling decisions for upgrading the DOT-111 and CPC-1232 tank cars to safer designs is left entirely to the fleet owners and may be driven by market factor influences and not safety improvements, and that was our major concern.

So the intent of that recommendation is to accomplish the replacement of the existing less-safe tank car fleet as quickly as possible. And we noted that, to date, and this is based on some March 2016 figures we were given, that the industry progress appeared to be fairly slow. We only had something over 200 tank cars that had been retrofitted and very few 117s that had been manufactured to date, but today we have some different figures and we'll have to digest that.

But in accordance with all of this, we have classified that recommendation, in our letter that was sent to PHMSA yesterday, as open with unacceptable response until PHMSA establishes a clear set of intermediate metrics that it can use to evaluate the safety improvements.

MEMBER SUMWALT: Thank you for that summary. And again, I realize that a lot of people have been
working very hard for a long period of time to improve
the safety of flammable liquids by rail, and that's
very much appreciated. And our job is to continue to
push to raise the bar and many of you have been
responsible for, in fact, raising that bar, so thank
you.

So what we've decided to do, I've decided to
make an executive decision that we're going to combine
this last panel into the free-for-all discussion that
we're going to have and just, you know, be out of here
by -- within an hour instead of -- you know, I mean,
these topics are so closely held. So why don't we go
around the room, and we'll start Willy. Willy, we
haven't heard from you, and I haven't called on you,
but you're always here for everything we do related to
rail. It's good to see you again.

And, sir, the question is, what is the one
thing you want to see done to make a difference in the
safe shipment of flammable liquids by rail? So we'll
just go around and if you say, well, Willy's already
said that, so I'm not going to say it, that's fine, but
we'd just like to hear from everyone just to kind of
get it on -- to hear your thoughts.

MR. BATES: First of all, I thank you,
Member Sumwalt, for the invitation and for us to
participate on the panel. Of course, my first thing
that -- I'm labor. I'm the one that picks that car up
and deliver it. And it would be a -- I would have a
peace of mind knowing that I got the best equipment
there, not legacy or some other tank car I'm pulling
behind me, because actually, I'm the first responder.

It's just like a statement made earlier said
that 117 would improve safety. My goal is I hope that
every car I pull is a 117 or have been retrofitted.
And we need your help. We need everybody's help. We
need the regulatory part, the railroads, the petroleum
industry, the manufacturers, let's get on the ball,
because the next derailment or next accident, we don't
want to talk about this again.

And we have 117 cars on the side, they
should be here working. They should be hauling the
materials. We don't want to have this conversation
again. I know it's about money, but how can you put
money on lives and communities that these trains come
through?

And that's the labor point of view because
it's my members, men and women out there, that delivers
that product. We want to have the peace of mind that
we have the best equipment behind us. If something
happened, I know everybody got my back because they
took the initiative to put the best equipment out there.

And hopefully, if that derailment or cars turn over, that it would stay contained. We don't have to go down in explosions and materials going in the rivers, contaminating rivers and stuff, you know, and that's where I'm saying, everybody have to be involved in this, because this is where the rubber meet the road.

My members are here that had the confidence that everybody in here is working hard to make sure that we have done everything that we should have done to make sure it's a safe way to transport these materials. If we have anything left in safety in mind, we're in the wrong business because, you know, we can't keep thinking like we always thought about, the bottom dollars, we got to think with safety first.

If you're thinking with safety first, then money going to come, because you have the safest operation that you can possibly have. And I don't like to see -- I don't want to hear about the legacy 111s. They should have been history. I don't want to hear about what we going to do when my members hauling up and down the road retrofit 117-type cars so that something happened, at least we have a fighting chance,
or if we're not first responders, at least we have a chance to go back and do what we can to help mitigate or rectify the situation. Thank you.

MEMBER SUMWALT: Willy, thank you for those poignant remarks. Kevin?

DR. NEELLS: Well, I think it's important to, kind of, step back and look at the story we've been hearing here today. I made a comment to some people over the break that I think from a safety and risk reduction standpoint, parking cars is as good as, or if not better than, modifying them. Paul was saying a relatively small number of cars have been modified, but a large number of cars have been taken out of service.

We've heard about, you know, the market has shifted, pipelines are carrying more of this, I think the amount of risky traffic that's the subject of this rulemaking has really gone down a lot. And so I think a lot of the risk has gone away for that reason.

And from what I'd like to see, I think, you know, we've heard a little bit, we've been trying to make sense of the numbers we've seen here about, you know, what's in the fleet and how are these new cars coming in? I'd like to see more information like that so we can all monitor this as we go forward and see just, you know, whether this risk is going down, what
else we need to do to kind of keep it going down, but I
think we should -- you know, we shouldn't be too
worried about the fact that we haven't had a lot of
cars coming out of the shops modified because a lot of
the riskiest cars are going out of service.

And I think the overall problem has gone
down and we just need to make sure that we continue to
monitor it as it goes down and know what we're doing,
and know what the remaining problem is that we need to
address.

MEMBER SUMWALT: Kevin, thank you. And I
think I want to make sure, you said there's a big risk
of having cars brought out of service?

DR. NEELLS: No, I didn't say that. I think
that we've had a lot of cars taken out of service and,
yes, things could turn around, some of them might be
put back in, but I think, you know, that's a
possibility. It doesn't seem a likelihood that we're
going to see a major shift of that nature, but the
retirement of the riskiest cars is a good thing, we're
seeing more of the newer, safer cars going into
service, and I think we should have the ability to
monitor that as we go forward so we can keep an eye on
how all this is going.

I think in due course, you know, we'll see a
much safer fleet hauling what should be a reduced
volume of traffic that we're worried about. We want to
be able to make sure we can see that as it goes on. I
mean, as Bob has said, it's tricky to measure this
stuff with the available information and we've all
struggled to get our mind around it.

I know, from my own experiences, how tricky
some of this stuff could be. That's what I'd like to
see, is more information to monitor it going forward,
but I think, let's keep in mind the fact that the
overall problem now is a lot smaller than it was when
the rulemaking started, and the risk is correspondingly
reduced.

MEMBER SUMWALT: Yes, we really do have a
different landscape now than we did in May of last
year, May the 8th, when that rule was published, and
especially during the comment period from October the
1st of '14 to May the 8th. I mean, it's a different
landscape because of the crude market has changed, so
thank you. Dick?

MR. KLOSTER: So you asked my opinion, so
here it is. So the last three years have been a very
pitiful three years for, you know, this segment, and it
actually, you got to go back to 2009 with Cherry
Valley, when the efforts really started off, so it's
been, what, seven years, and we finally, finally, I'm
talking about the whole industry, not just the
operating companies, the rail equipment, or the rail,
or the supply chain, but also the shippers and the
regulatory side, so that whole industry, we finally
have a rulemaking, you know, last -- a little over a
year ago.

But there are still some outstanding issues.
Some, you know, we can have some control on others, you
know, like the ECP brakes, we don't. So what I would
really like to see is, I would really like to see a
settling of that. I would like to see those things
resolved so that the industry, the broader industry,
can move forward.

You know, we've got different -- this fleet
serves different segments of the market. Ethanol, as
an example, is a little bit less problematic. Crude is
very problematic, not the least of which is, you know,
how big does the fleet need to be and, you know, what's
going to happen to oil prices, and crude by rail
relative to pipeline, and I could go on and on, but the
point is, is that, you know, the uncertainty with the
rules, the last remaining items, but also there's a
little undercurrent of uncertainty as to, okay, what's
next?
Needs to be settled so that people can start planning for the future, so we can start making those hard decisions, because this is not all about safety. It started all about safety, but the pragmatic reality is there are supply chain and economic, and I don't mean just economics for our industry, I mean economic beyond, you know, the general economy.

There are economic issues that come into play and I tell people, you know, they ask me about, you know, railcars and whatnot, and I say, well, you know, it's a lot easier to take a picture of a flaming, you know, fireball out of a tank car than it is take a picture of a guy not setting a handbrake or a piece of broken rail to put on the front page of the New York Times.

So I think the rail equipment sector has really been affected from a packaging perspective to the point where I think we've gone about as far as we can go. We can make the tank cars tougher. We can put 1, 1-1/2, 2-inch thick shells on them, but at the end of the day you're only going to be able to ship 5000 gallons of crude or ethanol and where are the economics in that?

So there's got to be, you know, an understand, a balance, between safety and the economic...
viability of moving these products by rail. If we decide to -- I mean, if the objective is to, you know, regulate the movement of these products by a different mode, then fine, then just, I think the best thing to do would be to let the industry know that so they can go and move on to other things.

So with that said, that's kind of my thought is, we need to settle it, settle it as soon as we can so we can move forward.

MEMBER SUMWALT: So to make sure I've got this right, you would be in favor of 2-inch shells.

MR. KLOSTER: In a sense that if you did want that, then I would just go spend my time doing something else.

MEMBER SUMWALT: I got you. Thank you very much. And, John, thank you for -- this has been a great discussion. So, John, you're next.

MR. BYRNE: Yes, I certainly echo Dick's remarks with respect to uncertainty. You know, the Railway Supply Institute has been working, you know, with the AAR, you know, since 2011 to, basically, address safety on a voluntary basis without a standard. And now, we're faced with having to do a lot of rework because the voluntary efforts that we made, you know, basically, didn't meet the final acceptance standard
for flammable liquids cars.

You know, so dealing with uncertainty is extremely important. We're still reeling from uncertainty, okay? I think that the industry, on a voluntary basis, has done a very good job in terms of improving packaging overall. When you look at the fleet percentages and the types of cars, yes, we still have a long way to go, and understand completely that, you know, due to a change in product mix that, you know, our areas of risk are different than they were when the rule was created, and we're struggling to basically align better packaging with where we believe risk resides today, okay?

In our role, the builders, the owners, you know, we don't have absolute control, we can't compel our customers, the shippers, to use better packages. You know, they have to deal with, you know, economic reality, they have to deal with, you know, some regulatory uncertainty, and they're dealing with some long timelines right now, and there's really not a lot that, basically, provides some incentive to doing this before the deadlines.

Now, the RSI companies will have to deal with this eventually. I think most of the RSI companies would prefer that we have, kind of, a ramp-up
to the finish line as opposed to waiting until the last minute and then having a crisis, so understand it completely, and I don't have a solution to offer, but there needs to be some incentive for the shippers to respond early.

You know, the RSI members companies create the capacity, we don't, at the end of the day, decide what cars they use.

MEMBER SUMWALT: Great. And when we come out of this particular question, if you will, I really do want to probe about those incentives for an early implementation. As I mentioned before, the tax credits or some other ways, either the carrot or the stick, so I'm looking forward to that discussion. Bob?

MR. HULICK: Thank you, Member Sumwalt. You know, there's been some conversation here about clarity and harmonization, and I think I'd like to congratulate the group because I think we've really come a long way in getting clarify and harmonization, and I think I harken back to a couple points in time. One was, John referenced the CPC-1232, which was a voluntary standard, and I think we reached the conclusion working together, and I think the industry responded very well.

There was more than $7 billion invested in those cars, which was, from a reliability standpoint, a
step forward. We now have the challenges that DOT-117, TC-117, bring us, but I guess I'm pleased to see, once again, that we are responding, you know, we are building new DOT-117 tank cars. We are modifying tank cars.

It is driven, to a large part, by demand in the marketplace, as we discussed today, and it is a cooperative decision process, as we've discussed today. Safety is Job 1, certainly from my company and I think for everybody else involved here, so that's never in doubt, and that's what we work for every day, and we'll continue to focus our efforts.

When we talk about, you know, what might be different, I might go back to Rachael's question about cars that are currently stored and if they would come back to service or not. There may be some opportunities where there are stored CPC-1232 jacketed tank cars that only require a bottom outlet valve handle to be a DOT-117R.

Right now, if you look at the cost of moving one of those cars to a shop to do that modification and then return it to service, there's significant costs and a lot of coordination that's involved to get that done. Maybe something we can take away is working together to make that very efficient because that's the
modification that certainly could be done to an idle, it's not a significant investment, and those would be the cars that could then return to service as the market picks up, first, and that gives us a little bit of a runway to look at is to where that demand's going and what other cars might need modified or may not be modified, and respond in an appropriate fashion.

So that's the takeaway that I have today. I certainly appreciated the privilege of being here and part of the conversation, so I thank you for that.

MEMBER SUMWALT: Thank you, Bob. And certainly, you've offered great insight, so I'm really glad you've been here, so thank you. Greg, I know you're going to have to leave in a few minutes, and so I sure do want to hear your thoughts before you leave.

MR. SAXTON: Thank you. First, thank you for assembling us, and then, really, what I -- my takeaway from this is, we've done an awful lot of good work so far, there's a couple of things we still need to figure out. The FAST Act didn't spell everything out perfectly. I'd hate to see us start bickering amongst each other and not get to the finish line.

I think we can get there. I think we should take great satisfaction in how far we have gotten. It's a tribute to all of you, to all of us, to our
industry. This is an important industry, the rail
industry, to this country, and I do believe it's one of
the things that makes America great, and we need to not
lose sight of that, so let's keep working together.
That's my message.

MEMBER SUMWALT: Well, the nation's economy
is built on the backbone of the rail system, so you're
exactly right. I'm trying not to ask follow-up
questions as you're going around because that would
delay things, but since you are going to leave, you
mentioned, you know, that there are some things that
were not addressed in the FAST Act, so if you could
name one or two of those before you --

MR. SAXTON: Well, we talked a little bit
about the thermal insulation on the retrofit, that
would be one, and really, I think as an outsider looks
at this question, they're thinking to themselves, oh,
boy, these guys want to cut a corner. Actually, RSI's
position on that, in my opinion, and certainly, my
position within RSI is, let's get this settled out.

This is something that was kind of left
vague and some people might be tempted to do it one way
and some people might be tempted to do it the other.
Let's just figure out what's going to be -- what really
meets the intent, let's agree to it, and get on with
it. I'm not going to feel terribly bad either way. In fact, a decision that goes either way on that issue, I'm good with it. Let's make it, let's get on with it, because I think that's how we get things done.

MEMBER SUMWALT: Great. Thank you. Thank you so much. Safe travels.

MR. SAXTON: Thank you, sir.

MEMBER SUMWALT: David.

MR. WILLAUER: Thank you, Robert. My role in this has largely been through the crude oil subcommittee work that I've been doing with the TRB, and I think that communicating rail safety across the country using facts to counter the hype that's been created by this is really important. Communicating is so important in getting the message out to the public.

And if one thing I can say about this shale, oil, and gas revolution, if you will, is that it's really raised people's awareness about hazmat transportation in the U.S., not just about crude oil, but other products, other hazardous materials, and since we can't stop interstate commerce in this country, it's surprising how many political representatives in states and counties along the way have tried to do just that. And they say, well, we're just going to have to stop these trains or we're just
going to have to not transport this through our cities
and towns, as if the railroads have something to do
with it or even have a choice.

And so that kind of communication, I think,
can't be overemphasized. And we're also shipping a lot
of commodities through urban areas, so urban areas are
getting a big focus right now on raising awareness
about some of the derailments that have occurred, even
recently, here in D.C.

I understand you didn't choose to
investigate that derailment on May 1 because only one
tank car breached and it wasn't a -- it didn't rise to
the level, but maybe part of that could have been
communicated more because it almost came and went in
one news cycle.

The other thing that I would just like to
mention is that we also spend a fair amount of time
trying to provide both communication to and training
for first responders to provide public protective
actions in the event that they need to respond to an
incident in their backyard. Then just as the energy
market is expanding and changing, that's also changing
the requirements and the need for different types of
response techniques.

Firefighting for ethanol wasn't even
considered as much as it was recently. Ten years ago, I know we were looking at some maritime uses of alcohol-resistant foam, but suddenly, firefighters are saying, well, we need more of this, and so there's a good example of a change in the industry that resulted in a change in first responders as well.

So I think that kind of communication about rail safety to the public is so important and this is a great venue to do that. One of my suggestions I've written down for future roundtables is not to stop at rail, but since you're a multi-modal organization, you could, perhaps, look at maritime, pipeline, motor carrier safety in the same spirit, since rail is only 5 percent, I think, of crude oil transportation. It's a very small piece of the puzzle, so those are some remarks. Thank you.

MEMBER SUMWALT: I really appreciate those remarks and I'll have to admit, we're not through for the day, but there's been tremendous collaboration in this very open discussion, very informative, and coming from groups who have competing interests and don't always see things the same way, but it's been a remarkable dialog so far and I really appreciate everybody's being able to listen and exchange viewpoints, so thank you. And, Andreas.
MR. AEPPLI: Yes, thank you, Member Sumwalt. I've also really enjoyed this session here today. I think I kind of want to second here what Kevin said a while ago, which is, there's a need to make sure that we're working with the right information, and I think today was really kind of eye-opening, seeing what's already happened in terms of the adaptation of the fleet to adhering to the safer DOT-117 standard.

And I think as we go forward, I think it's really important to have that information available because it's freely out there, because I think when you want to hold people's feet to the fire to make sure that this conversion happens, you know, having the information available for everybody to see, I think, is a very effective tool, particularly as we get closer to the deadlines of 2023 or 2022.

I mean, short of not transporting this kind of hazmat, you know, the way you make the system safer is to ensure that everybody, you know, is aware of what's going on and adheres to the regulations and requirements that are being called for. Thank you.

MEMBER SUMWALT: Thank you very much. Greg, you're on deck.

MR. JOHNSON: Well, thank you. Just a couple of, I guess, closing thoughts from my
perspective and the leasing company perspective, certainly, we've put a lot of focus on the tank car package. I think it's important that we also keep the same focus and pressure on keeping the cars on the tracks in the first place. And I know a lot of work has been done around, you know, those issues as well, but for a tank car owner, one of the most frustrating things is, we don't really control the operation of the train, but we have to, you know, deal with some of the aftermath in terms of regulation for the assets.

Somebody else mentioned, you know, uncertainty, and certainly as a company that invests, you know, in long-term assets, uncertainty is bad for us. We thought we had kind of made some strides with the CPC-1232 cars, made a big investment, the entire industry made a huge investment, in 1232 cars, to find out that that wasn't going to be the end game, and five years after the investment, you know, we're faced with some pretty significant costs to retrofit, modify, retire, repurpose, do something with those assets.

And for a leasing company in particular, and industry owners that bought cars, you know, that's an unsettling issue. So as we said earlier, a couple of open issues, I think, in terms of the tank car specifications, ECP and this jacketed 1232 car, and
whether it really has a huge safety improvement to add a ceramic blanket, given the cost to do that, are important things to clarify. The sooner the better so that we can move forward with, you know, whatever decisions we have to make.

And then lastly, you mentioned, you know, incentivizing people to retire, upgrade, do something for their fleets, and I think that's an interesting idea. I'm sure that most tank car owners would welcome some type of investment credit if they retire or retrofit, particularly the newer -- the 1232 cars, where the big investment is, and yet, those cars carry a pretty, you know, high book value, and the retrofit costs are pretty substantial.

And for a leasing company, at least, we look at, you know, what is the safety gain, what is the marketability of that asset over the remaining life. One of the unknowns, from my perspective, is how the railroads will treat a retrofit car from a freight perspective differently from a new DOT-117J.

We know that it will have a thinner tank shell and so will there be penalties on the freight side which, ultimately, will impact our ability to market the car, it will affect the shippers who pay those freight rates, and I don't know that we know the
answer to that question today.

   From my perspective at Wells Fargo, you know, we're not anxious to retrofit anything, quite frankly, we are adding new DOT-117s to the fleet as we speak, 12 percent of our tank car fleet is now a DOT-117, and that 12 percent includes all of our non-flammable cars as well. Probably 25 percent of our flammable cars are now DOT-117s, but we're faced with the issues of what do we do with all the 1232 cars that we invested in?

   It certainly would be more palatable for us if they met the pool and torch fire tests on a jacketed car not to have to strip the jacket off and put a pretty significant investment in that car for, I'm not sure exactly what the safety gain would be, so those are my comments.

   MEMBER SUMWALT: Thanks. To be clear, let's see, to retrofit a 1232 car, they will not have to have the thermal blanket, is that correct?

   MR. JOHNSON: No, on a non-jacketed car, we understand the requirement to put the thermal blanket and a new jacket. It's the cars that currently are jacketed and have 4-inches of fiberglass insulation on them already, will those jackets have to be removed, the ceramic fiber applied, and then the insulation and
jacket reapplied? It's a pretty substantial part of the cost.

MEMBER SUMWALT: Sure. And I guess as I've been commenting the last few days, all these numbers and all are starting to run together in my head, so that issue has not been resolved, is that correct?

Okay. All right. Thanks.

MR. JOHNSON: Thank you for having us.

MEMBER SUMWALT: Thank you very much. And, you know, you mentioned the 1232s are also called the good-faith cars, and they're called that for a good reason, the industry came together October the 1st of 2011 and said, this is what we're going to do and they're going to do it in good faith, and we believe this is going to be the answer.

And so, I mean, I can understand the disappointment that that's not the answer at this point, but it was a very good-faith effort to try to do the right thing for the right reasons, so thank you very much.

And I don't think that anybody in this room would disagree that keeping the trains on the track, that's the first layer of defense, let's do that, and so you're right, a lot of work's been done in that respect and a lot will continue to be done in that.
regard. Thank you. Ray.

MR. MORGAN: First of all, I'd like to thank you, as many have, for the opportunity to be here today and to contribute. I think it goes without saying that a number have commented and provided substantial input here as to the pros and cons of where we're at, and how we got here, and et cetera, and what still needs to be decided.

What I'm most excited about is the opportunity for us to leverage the things that took place, such as the good-faith effort and the opportunity for the industry to come together, the stakeholders to come together, to figure out how best to do these things in a proactive manner as opposed to waiting for someone to decide, be it regulatory or et cetera, so I'm most excited about that opportunity.

And what that really means is, how can we leverage that to address other issues that affect railcar transportation and safety? So I don't know that I can add a lot to what's already been said. I think there's some valid points here. There might still be some opportunities to figure out better ways or to improve upon what's been done thus far. Again, I think the value is that if we do that together in advance of the need for someone to make a decision for
us, then we, as an industry, will be much better off.

I also would like to say thanks to the industry for the opportunity to support those efforts, to provide services, such as retrofits, such as maintenance and qualification, and so forth, but again, I don't know that I add much, except that I'm excited to be here and thank you for the opportunity.

MEMBER SUMWALT: Well, thank you very much. Thanks for being here. Nicholas, do you think we can have the transcripts from this up by the end of next week? What are you looking at turnaround? Okay. So within two weeks we should have the transcript. And I'm really excited about the transcript because I've been a one-arm paper hanger trying to juggle, what's the next question as well as listen, and so I'm afraid I've missed out on some of the listening value, but I do look forward to actually getting the transcripts and reading them, and I think there's a lot of good meat in here. Kelly?

MS. DAVIS: Well, the ethanol industry has always been pro rail safety. We've been heavily involved with the tank car committee since the Cherry Valley incident, and we were complicit with the CPC-1232 cars. It is new for me to hear today that the CPC-1232 car may cost more to retrofit than the legacy
DOT-111, so I'm still taking in that information.

I definitely concur with some of the first speakers in information. As businesses move forward they need to make risk-based management decisions, and so the more information they have in front of them, very similar to what Mr. Fronczak bought for us today, I would love to see that on a semi-annual basis, if not possible, a quarterly basis, and distribute it so that we can all understand this, and distribute to our members for them to understand what to do.

Rather than reiterating what other speakers have said, I'm glad you brought up about ethanol and safety on the rail. We have worked with TransCare since the Cherry Valley incident and we have received awards from TransCare the last four years in a row. We developed an ethanol emergency response program years ago that has just fed on itself.

We have trained over 5000 emergency responders over the last few years and now we have moved to what I call train the trainer classes, and these train the trainer classes through the International Association Fire Academy are so popular that they're selling out as soon as we put them up on the Web site.

So we have two more scheduled over the next
two months, and right now, we've already trained 630
trainers, so we're quite proud of our ethanol emergency
response organizations that we have and publications.

I also do want to comment on the other side
relative to, once an unfortunate accident happens,
there is a cleanup, and environmental mitigation, and
things like that to do, and we just recently hired
Pinnacle Engineering to redo our documents that are
freely distributable on our Web site.

There's a very valuable technical document
about how to cleanup and mitigate these ethanol
situations. So rather than reiterating what everyone
else has said, I too agree, I am thankful to be here
and I appreciate the opportunity to speak.

MEMBER SUMWALT: Glad to have you, Kelly.
Suzanne.

MS. LEMIEUX: Thanks for having me as well.
I think it's important to put in perspective that in
the U.S., daily, we consume 20 million barrels of oil,
all of it which is transported by marine, pipeline,
rail, or truck. We don't have a lot of incidents. I
think, in the industry, that we don't see
transportation as a risk. It's just a function of
business that we -- it's a critical function that we
feel is important to the economy, to the U.S., to
viability as our economy globally.

And we feel our safety record is pretty good, especially in transportation. We are glad to have the rule finalized and we're looking forward to 251(b), because we think that will also enhance the ability to respond to incidents. We've also worked jointly with AAR to create a TransCare program for emergency response, which is free. The Class-Is are all using it as they train, so we're looking forward to that information getting out.

And again, these conversations are really helpful and we hope that we're able to communicate the information that you need to understand what our product is, how we move it safely, and how to continue doing so in a collaborative way. Thanks.

MEMBER SUMWALT: Thanks, Suzanne. Gabe.

MR. CLAYPOOL: This is one of those scenarios where you wish you could have gone first because you've all taken my ideas, but I'm going to go back to something that Mr. Bates started with, which is the first responder side of things. It was enlightening and concerning to me in the last several years of being involved in the crude by rail, specifically, industry how uninformed a lot of these first responders are, specifically in rural America.
You talked about ethanol being rural, but so is crude by rail, and so there are all these infrastructure that are going to these different coastal facilities for the most part, so I would like to see a more universal playbook that's widely distributed and successfully trained upon. That's a concern from our perspective that these men and women that are going in there, from a first response perspective, don't know what they're dealing with.

In the one example, I had a conversation with a Minnesota hazmat training officer who told me that, up until two years ago, 1267 was crude oil, and they didn't appreciate the difference in heavy sour crude oil out of Canada versus the light sweet Bakken crude oil, and the difference in the composition, and what this will do under stress. So I guess that would be an expansion of what Mr. Bates started with is just a more consistent playbook and also the training of it for these first responders.

MEMBER SUMWALT: Denford?

MR. JAJA: Not to sound like a broken record, thank you for putting all this together and for the opportunity to be part of this panel, and to a point that's already been made, a lot of the points have already been discussed and issued, but we, as a
company, and as an industry, are fully committed to safe crude rail operations and transportation, and we support a holistic approach to the safe transportation of our crude.

We believe that this should be, really, a joint effort between the industry, the shippers, railroads, the regulatory bodies, to approach this with prevention, mitigation, and emergency response in mind. We are fully supportive of a science and fact-based approach to safety. We understand the fireballs make interesting headlines, but we would urge that we approach this on a scientific and fact-based approach.

But I would just like to finish off by saying, you know, we still face a lot of uncertainty, as has been mentioned by a couple of my colleagues here, and the faster we can resolve some of these uncertainties in ECP, and thermal insulation, and thermal blankets, I think that'll give us some certainty on the path forward with what we're going to do with our railcars. Again, thank you for having us and it's really been informative.

MEMBER SUMWALT: Denford, thank you for being here. Andy.

MR. ASH: Yes, I've been just listening to what everybody's been saying, and I've been kind of
thinking, rolling it over in my head, what I was going
to say, but here it goes anyways. From a Canadian
standpoint, and myself as a career railroader, boots on
the ground, and as a railroad dangerous goods
responder, you know, I think I can safely say that the
railways are extremely dedicated to safety; keeping
them on the rails. That's good business.

Unfortunately, it's a risk-based mode of
transport, as any mode of transport is, and accidents
do happen, so this is where what we have to do from,
how are we going to make things safer, and we've done a
lot of talks today, but we have to continue to
communicate, collaborate, and cooperate with each
other, all the different entities out there, and what
we work with.

We work hand-in-hand with Transport Canada,
we work with the FRA and PHMSA, actively involved in --
AAR tank car committee does tremendously good work with
RSI, and we work a lot with all the associations, the
petroleum producers, renewable fuels, we're all in the
same boat, and we're all in there working together, but
the common goal is safe transportation of dangerous
goods, or hazmat, since we're in the United States.
I'll use that term.

And the general public and our customers
depend on us to do that, so that's why it makes our work, what we're doing here, so important. And lastly, a good example of that is what we're doing today, so I got to thank the NTSB for putting this panel all together to come and discuss the issues. Thank you, sir.

MEMBER SUMWALT: Well, let me assure you that this panel would be nothing if it weren't for the participants like yourself and everyone else here, so thank you very much. Bob, you're up.

MR. FRONCZAK: Again, thank you for inviting me. It's been a great discussion. I guess I will have to reiterate what Mr. Bates said, and this is one, you know, area where rail management and rail labor is together, we would like to see the phase out of, you know, the 111s and the CPC-1232s as soon as possible, or to put it a different way, we'd like to see everything converted to a 117, 117R as soon as possible.

Having said that, I can't snap my fingers and make that happen overnight. You know, there are deadlines set in the FAST Act that are reasonable. If they can be beat, that'd be great.

MEMBER SUMWALT: Fantastic. And I keep saying we'll get to this question, but yes, I'm looking
forward to the discussion about what can we do to
incentivize the accelerated phase out, or phase in,
depending on which way you look at it. Ken.

MR. DORSEY: I guess I'm going to echo the
uncertainty. I've seen great safety innovations that
were delayed in implementation because people were
uncertain of what the final target would be, so where
we can eliminate the uncertainty to establish a firm
final target, and I'll a little self-serving here, I'd
like that to be both sides of the border because I have
to work for folks both side of the border, but I'd like
to see that come out of discussions like this so that
we can actually nail down what goals we are going to
achieve and everybody can work towards them.

MEMBER SUMWALT: Great. And to that end,
when kind of get into the open discussion here for the
last few minutes, not now, but one of the questions I
do want to ask Andy and either you, Ken, or Bob, is the
harmonization across the border, so be thinking about
that one because we certainly don't want a different
level of safety depending on which side of the border
you happen to be on, so be thinking about that one, so
we'll ask that, so, Karl?

MR. ALEYX: Well, first, I'd like to thank
you for thanking us for the rule. That's the first
time that's happened, but this has been a great opportunity. You know, we, as regulators, participate in a lot of these types of forums. I mean, we have, you know, the tank car committee we participate in, we meet with shippers, we meet with the RSI, and this is, for us, really important to obtain information.

Sometimes I'm guilty of it, I sit inside the beltway and think I know it all, and then I start to hear from these folks and they straighten me out, often, and they do it nicely, so I appreciate that, except for Ken. So these are important opportunities for us.

For me, one of the big things that I think that we can get done is educating people. I think educating people outside of this group. We have a lot of people responding to things that -- you know, things like properties of material, those type of things. I mean, we are focused here on the tank car. I've heard it mentioned a couple times that we need to focus on preventing these derailments. I think, for me, for everybody, that's the biggest deal.

But making sure everybody's educated. We have folks here in Washington, D.C. who put demands on our agencies to do things. They have a very -- they're not as educated as they need to be about what's going
on, and I think it's incumbent upon us to do our best
to make sure they know the whole story, they understand
the implications of what they're asking us to do, so
that's another important thing.

Let's see, and I guess that's it. I mean, everybody else, what everybody has said, you know,
thank you for this opportunity. Other things, we're
working on, you know, the uncertainty around the
thermal protection. You know, we're taking a hard look
at that. We're not taking it lightly. We understand
what it means to industry and we understand what it
means not just to the cost, but the schedules and
everything, so be certain that we are taking it very
seriously, so once again, thank you.

MEMBER SUMWALT: You're welcome. And I
guess that decision on whether or not there's a thermal
protection required, that will be -- does that have to
be resolved by the one year after the passage of the
FAST Act, is that part of that, or when will that --
that's not a part of that.

MR. ALEXY: There's no time limit. We're
just making sure we've got all the information we need
at this point.

MEMBER SUMWALT: Got you. Thank you. Okay,
Rob.
MR. BENEDICT: Well, thank you. I think this has been a great day of collaboration and before I get to my concern I just wanted to kind of thank everybody in this forum and beyond for collaboration, whether it be a TRB subcommittee, or commenting to our rules, or working together with AAR on modification reporting. I feel like it's, collectively, we worked very well even though our interests don't always align.

As far as my concern, I think my biggest concern would be hearing of cars being built and not being used, and while the FAST Act cements, states, those are, like as we mentioned, deadlines, not requirements, so I would just urge, to the extent feasible, go beyond business interests or obstacles and try to get those on the track, whether they be a retrofitted car or a new DOT-117, and I think that would go a long way.

Lastly, just kind of a comment, I think it's very important that we're transparent in this and I think, you know, I know one of your big concerns is modification reporting, and I think putting those numbers out there for the public, which, we're working together with AAR, will go a long way at letting the public know where we are at on those retrofit schedules.
Just one comment, as far as a percent completed timeline, that's a little bit more difficult nut to crack because it's not a constant rate, and as we've seen with this, demand changes, that changes, so thank you again for having me and it's been a pleasure.

MEMBER SUMWALT: Been our pleasure to have you. Ben.

MR. SUPKO: So I hope I can clear up a couple things that came up, the oil spill response plan rule, HM-251(b), it was signed today, so it's been submitted to the Federal Register, it'll probably be on our Web site tonight, so you can take a look at that. And that's kind of, like, I guess, the crux of my comment here is, you know, we got really good at writing rules when we wrote the HHFT rule, so we're writing more, so we have several right?

So you have the oil spill rule, you have a rule for the -- several rules in the FAST Act, we're working through RSAC on some other rail issues, so I think it's important that if there are unresolved issues with the HHFT, the HM-251 rule, we can, of course, take those back, but please also express through petitions or other mechanisms to ensure that our leadership is seeing it in different ways, because some of these things, today was the first time I'd
heard about them. 

   So I mean, I know there's out there, but there's so much going on that we're all focused on our little pieces, so if we can get a more formal input through a petition system, that always helps to push things through and make them a little bit faster.

   And, Robert, I liked your comment, I thought that was very smart, you know, just because the timeline is established, and this is what it is, maybe the car that's the last car on the list that has a thermal blanket that meets 179.18, the CPC-1232, maybe that can move to the front, so that it's done, it's cheap, it's easier, you know it can be used.

   There are new ways that we can think about this, that, a lot of the times, you know, we get legislation, we get different things that we have to comply with that tie our hands a bit and it would take us a little longer, but there's nothing stopping industry from coming in and saying, hey, this is what we want to do, or just doing it, and moving that ball forward, because like I said, rules will continues to come, pressures will continue to build, and I'm sure that this isn't the last action, these aren't the last actions, on this issue.

   MEMBER SUMWALT: Ben, HM-251(b), so is that
the NPRM to codify the requirements of the FAST Act? Is that what that is?

MR. SUPKO: So that was the oil spill response plan and the information sharing rule, so it deals with the CRC notification under the EO, it deals with comprehensive oil spill response plans, and it also will address API RP3000.

MEMBER SUMWALT: When will there be a rulemaking effort -- I mean, when will the NPRM be out to codify the requirements of the FAST Act?

MR. SUPKO: So in terms of the thermal protection, the top fitting, and the schedule?

MEMBER SUMWALT: Yes.

MR. SUPKO: We're not doing an NPRM, we're just doing a final rule, and that is in its final stages of review, so I'm hoping -- I want to say in the next month, but I'll say before the end of summer.

MEMBER SUMWALT: Great. And I think the requirement is it has to just be done by the one-year anniversary of the FAST Act, I think.

MR. SUPKO: Yes, the timeline for the changes to the schedule were immediate. The timeline for, I believe, the thermal protection was 180, top fitting protection was kind of open-ended, but the thermal protection was 180 days.
MEMBER SUMWALT: Okay.

MR. SUPKO: So we're pushing those timelines already, so we're really going as fast as we can to get that out.

MEMBER SUMWALT: Fantastic. Great. Thank you. Leonard?

MR. MAJORS: Let me start by saying, thank you for the opportunity to be a part of this roundtable. It's been really enlightening to see everybody's role and obligation with rail safety. I know that there is still some work on our part to clarify the tank cars with the jacket and the fiberglass. We're working and we're working really hard to kind of like clarify that.

Also, my takeaway is that, you know, this group has enlightened me on some of the issues that were outside of the tank car as well, so I just want to say thank you for the opportunity.

MEMBER SUMWALT: Appreciate your comments. We started out with poignant comments by Willy Bates, who's representing SMART, and these are the guys that are, in part, operating the operating crews of the locomotives, the engines who are hauling this. And he made very compelling comments and now we'll end up with a gentleman that came from Oregon, Hale Gard, who is
the administrator of Rail and Public Division of Oregon's DOT, and of course, you have the same concerns that the rest of us have, but your state has experienced it most recently, so thank you for being here.

MR. GARD: Well, I appreciate the opportunity to sit in and really listen to this. This is a conversation with regard to equipment and how it responds after an accident, and that's an appropriate for industry, and the shippers, and the regulatory agencies to see how that equipment works.

From a state safety oversight standpoint, however, our primary goal is not to have it happen at all. And, you know, when you ask me the one thing that I'd want to see happen, Mosier, it was a bad day, it wasn't a horrific day, the 1232s actually performed pretty well in spite of the fact that we had a car breach, but that fire was out in less than 12 hours. It took 25 gallons of foam to put it out.

The incident command process worked really well. We still had scared people and we still had evacuations. We still are going to deal with the aftermath of that accident for a while. So for me, the one thing is to make sure that we've got the best inspection and prevention techniques and technologies
that we can possibly deploy because it was an expensive
day for the railroad, it was an expensive day for the
City of Mosier, it was an expensive day for the State
of Oregon, so prevention for us is always going to
everybody first and foremost.

I do want to make sure we've got the best
equipment out there so that it responds as it should in
case we have a derailment, but no derailment is my
preferred standpoint from all the way around, but this
discussion was great and every interaction I've had
with the rail industry, I see this level of
 collaboration and cooperation all the time, and again,
it makes me feel that I'm working with the best and the
brightest and the folks that really care about safety,
so thank you, and I appreciate the opportunity.

MEMBER SUMWALT: Well, thanks for coming all
the way from Oregon. I know many of you travel long
distance. In fact, Greg was headed back to Oregon and
a lot of you have come from a long distance, then some
of you had to ride the Metro this morning, which has
been interesting.

You know, I think this is a good high note
to end on, is the fact to have everybody go through and
express your feelings and your thoughts, and I really,
we had a stack of questions for this last one, but I
really just want to ask two questions, and then end it on this, and that is, the incentives. I believe, not that we're commenting on legislation, but a year and a half or so ago, Senators from Oregon introduced a bill that might have provided some incentives to move quickly.

And I understand in the next day or so, a Congresswoman from Oregon might be offering some legislation to be a companion bill for that on the House side. So let's talk about incentives I mean, what are the thoughts about maybe investment tax credits, tax credits, I mean, what are the thoughts for that? Any thoughts?

Okay. And then there's the other side of the issue, which nobody's going to want to talk about, and that would be the tariffs, so no one wants to talk about that, but nevertheless, there's some innovative ways. What would be some innovative ways to spur this idea of an accelerated schedule? Any thoughts to that? What would you like to see as a tank car owner, if it's not proprietary.

I mean, you mentioned, I think, Greg, that you spent a lot of money a few years ago and now you're seeing a different set of requirements.

MR. JOHNSON: I don't know what the answer
is, but certainly just from an economic standpoint, whether it be a leasing company, or a shipper that owns, you know, 1232 cars, I think, you know, anything that would help mitigate, you know, the double-whammy kind of thing that Dick was talking about. We already have, you know, an asset that we bought brand new, maybe as recently as 2011, that, you know, is going to be faced with some kind of a retrofit, and the retrofits aren't inexpensive.

So if there was anything that could incentivize, you know, a leasing company or a shipper private owner to replace or upgrade the cars sooner, I think that's something that, you know, could spur movement faster rather than later.

MEMBER SUMWALT: Thanks.

MR. KLOSTER: Okay. So after consideration, I have a comment about, high level, investment tax breaks. The last time the industry did it in a big way was back in the '70s, and it triggered an overinvestment in certain kind of railcar that, depending on which side of the fence you were on, was problematic, okay?

I think going forward, you know, there's that, you know, law of unintended consequences, so if there was any investment tax credit program that came
out that would be -- it would have to be very targeted
to help get over the hump. You have the rules, and
then you talk about wanting -- just to be blunt, the
regulators have decided what the rules are and they've
given them to industry. It's now up to industry to
implement them.

    But then on the other side, we say, well, we
want industry to go and speed up. Well, that's up to
industry, okay, unless you go back and redo the rule.
So if you come out with some sort of, you know,
incentive, investment tax credit, say, to incent the
owners of the equipment to move faster, then you need
to make sure that you get the right outcome, okay? So
that's my main comment there.

    The other thing I want to say is, you have
to understand too, 80 percent of all tank cars are
owned by private companies, publicly traded or
privately owned, but, you know, private companies,
essentially, and a lot of them are big banks. And a
lot of them have -- you know, the short line railroads,
as an example, there's a long time, you know, grants
and loans that's been going on, not so much on the
equipment side, and I think you might see the owners of
the equipment not necessarily wanting to get into that
because of the oversight implications.
I'd rather invest my own money and not have to worry about the obligations I would have from a reporting requirement than take on what would be perceived as those smaller advantages of getting that and then having the onerous reporting.

MEMBER SUMWALT: Fascinating perspective and I never had -- I mean, it really is fascinating, so I figured everybody would be all over the idea of investment tax credit, and that's a very interesting comment, and I think I heard a comment. Did I hear another comment over here? Great. Well, Dick, thank you for that. Let me just closeout on this one, and, Bob, or Ken, or Andy, I guess, really, it would be, I'd like to hear both from AAR and RAC, about the harmonization of rules between the U.S. and Canada.

As I said before, well, I remember when we had our public hearing on crude by rail, April of two years ago, on the day that we had that hearing, Canada had come out, Transport Canada had come out, with rules that restricted, just absolutely cutoff the shipment of flammable liquids, maybe crude by rail, in a certain type of tank car by a certain date, and we had not gotten there yet.

And I said, you know, we're going to have two different levels of safety. Somebody living on one
side of the border, down on this side of the border, will have a different level of safety than somebody on the other side of the border, and so where are we with respect to harmonization? And we'll closeout on that one question right there.

MR. ASH: We're all for it. You know, I got to be careful about my words because I don't want any visits from Transport Canada, or anything like that, but, you know, our position in Canada is very clear that we encourage harmonization between the Canadian and the U.S. regs, for obvious reasons, and we understand that -- and we're always willing to work with the Canadian rule makers on that, and we do.

And to be honest with them, they're fully committed to work with us as well, so we continue to do that and, you know, from a safety standpoint, we don't have any issues at all, but there are certain harmonizations, little nuances out there, little differences, but, you know, the goal is safety overall, obviously.

And not only that, but good seamless transport or shipments.

MEMBER SUMWALT: AAR, thoughts on that?

MR. DORSEY: Well, I might have to echo Andy. We're all for it. I think the only thing
hanging out is actually the difference between unrefined petroleum products and petroleum distillate, and that, actually, is only a short-term thing. It only really affects the first deadline. In the long game, I think the FAST Act did an awful lot to harmonizing. I don't think there's any big items for safety hanging out. The FAST Act did a really good job.

MEMBER SUMWALT: Great. Thank you. Two items, one would be, if you will, fill out your critiques, if you will kindly, and just leave them on one of the tables upstairs or in the foyer, the other is, as we closeout, I mentioned this yesterday when some of us met in here just to kind of go over the ground rules, but when I was given this flyer, back during the spring, for me to edit, I made some comments to the text. I didn't pay a whole lot of attention to what was said upfront.

It says, "NTSB Member Robert Sumwalt proposed a roundtable discussion.", and as I saw that on the big posters I became every self-conscious of it, because it's not, yes, I'm the one with the microphone, but there's been a lot of work by the team, and I want to fully recognize that team.

I'm honored to work with these folks that
really put this together. You assembled, as I said yesterday, and I've said today, a world-class audience of people that truly have expertise in tank car manufacturing, leasing, regulation, rail safety, and you've done a great job.

So we'll start, Nicholas Worrell is, again, the Chief of Safety Advocacy and this is an advocacy project, so, Nicholas, thank you and your team. Paul Stancil, Rachael Gunaratnam, I've been practicing that and I still can't get it right, oh, my God, there's another one, John Vorderbrueggen.

Thank you all and everybody that comes with that. I always like to thank Trey and Diedre in the audio both for making all this work. They've got to put up with following me all around and keeping my bald head out of the picture. Manuel, thank you for coming from Transport Canada, and finally, thank all of you all again for coming and participating. This roundtable would be absolutely nothing if it weren't for you. Thank you and Godspeed. Keep up the great work.

(Whereupon, the above-entitled matter went off the record at 3:32 p.m.)
CERTIFICATE

This is to certify that the foregoing transcript

In the matter of: Rail Tank Car Safety
Roundtable Discussion

Before: National Transportation Safety Board

Date: 07-13-16

Place: Washington, DC

was duly recorded and accurately transcribed under
my direction; further, that said transcript is a
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[Signature]
Court Reporter