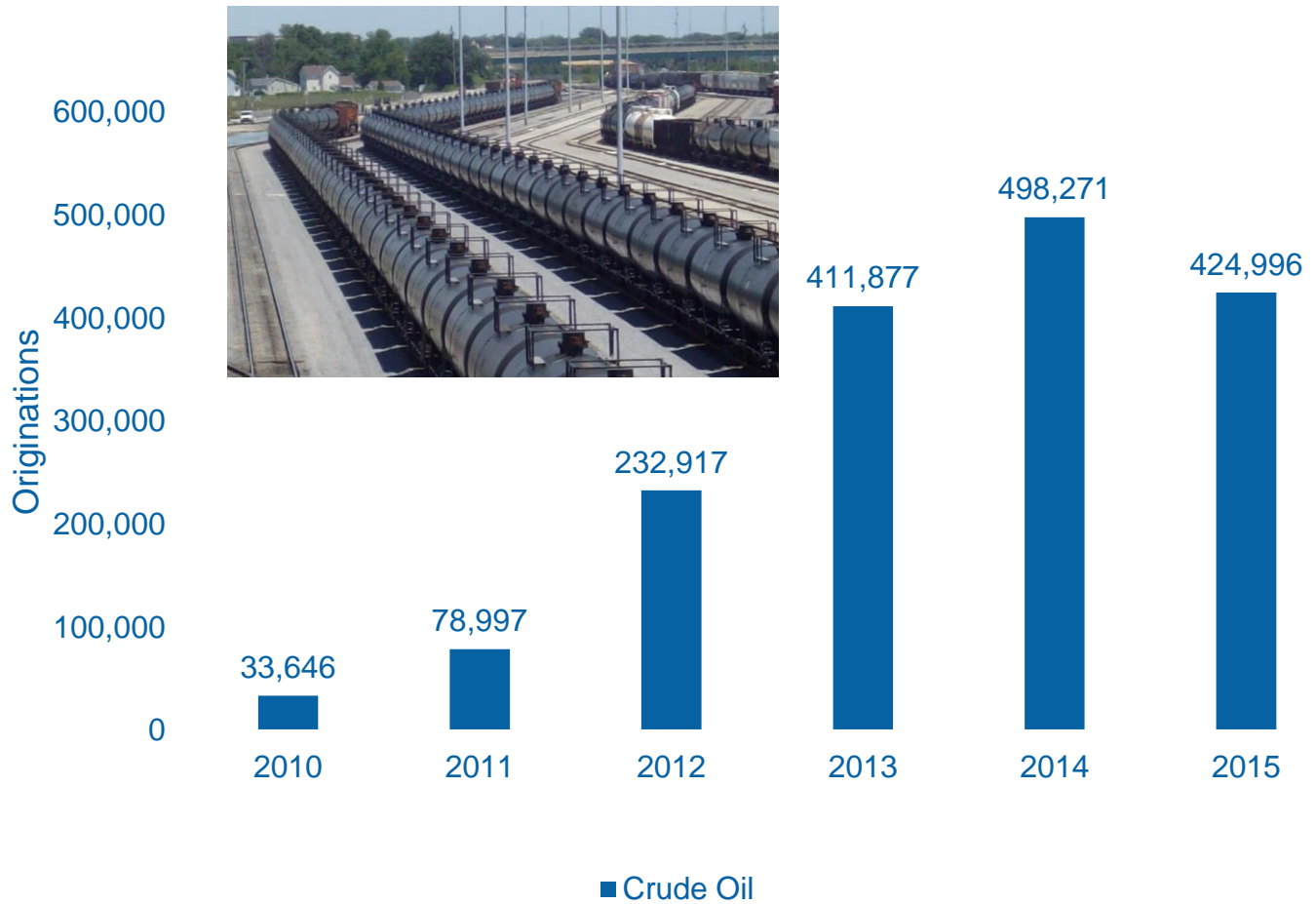




**NTSB Rail Tank Car Safety Roundtable
Washington, DC
July 13, 2016
Robert Fronczak: AAR**

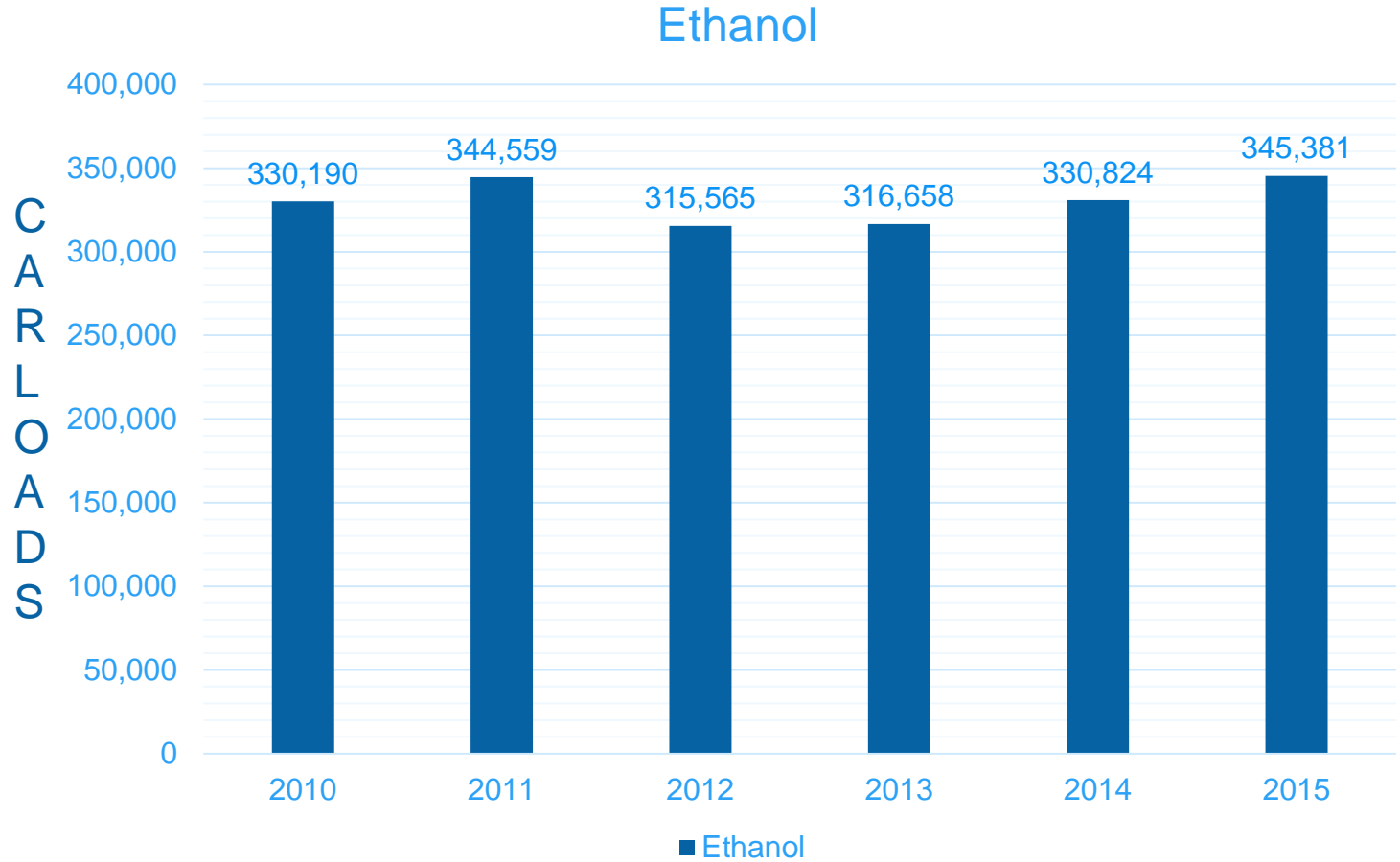
Rail Carloads of Crude Oil Declined 14.7% 2014 - 2015



Source: AAR Train 2



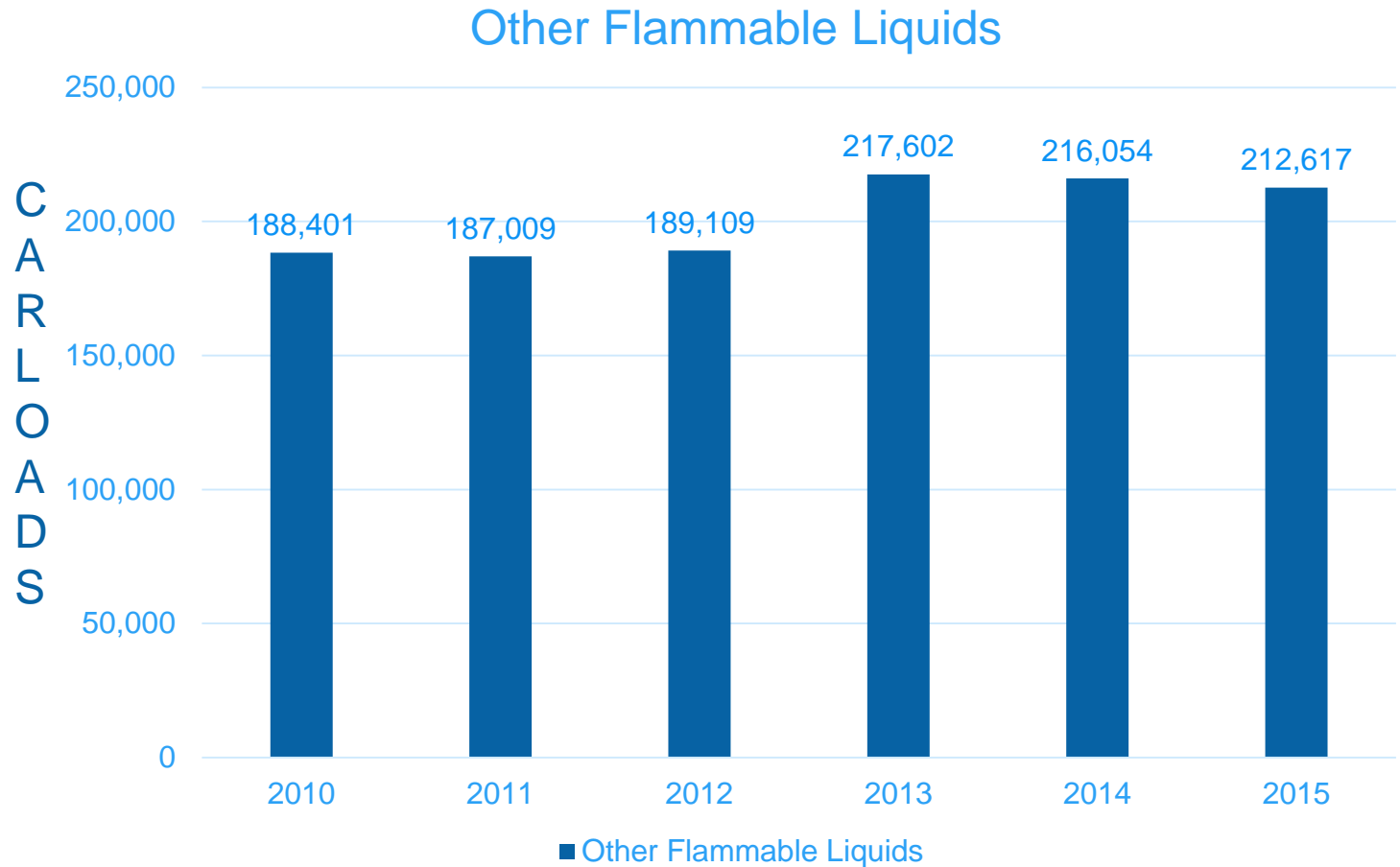
Ethanol Carloads Have Been Relatively Stable Since 2010



Source: AAR Train 2



Other Flammable Liquids Saw a 15% Increase 2012 - 2013



There Has Been a Nearly a 97% Reduction in the Number of DOT-111 Tank Cars Making at Least One Shipment Of Petroleum Crude Oil from 2013 - 1st Quarter 2016

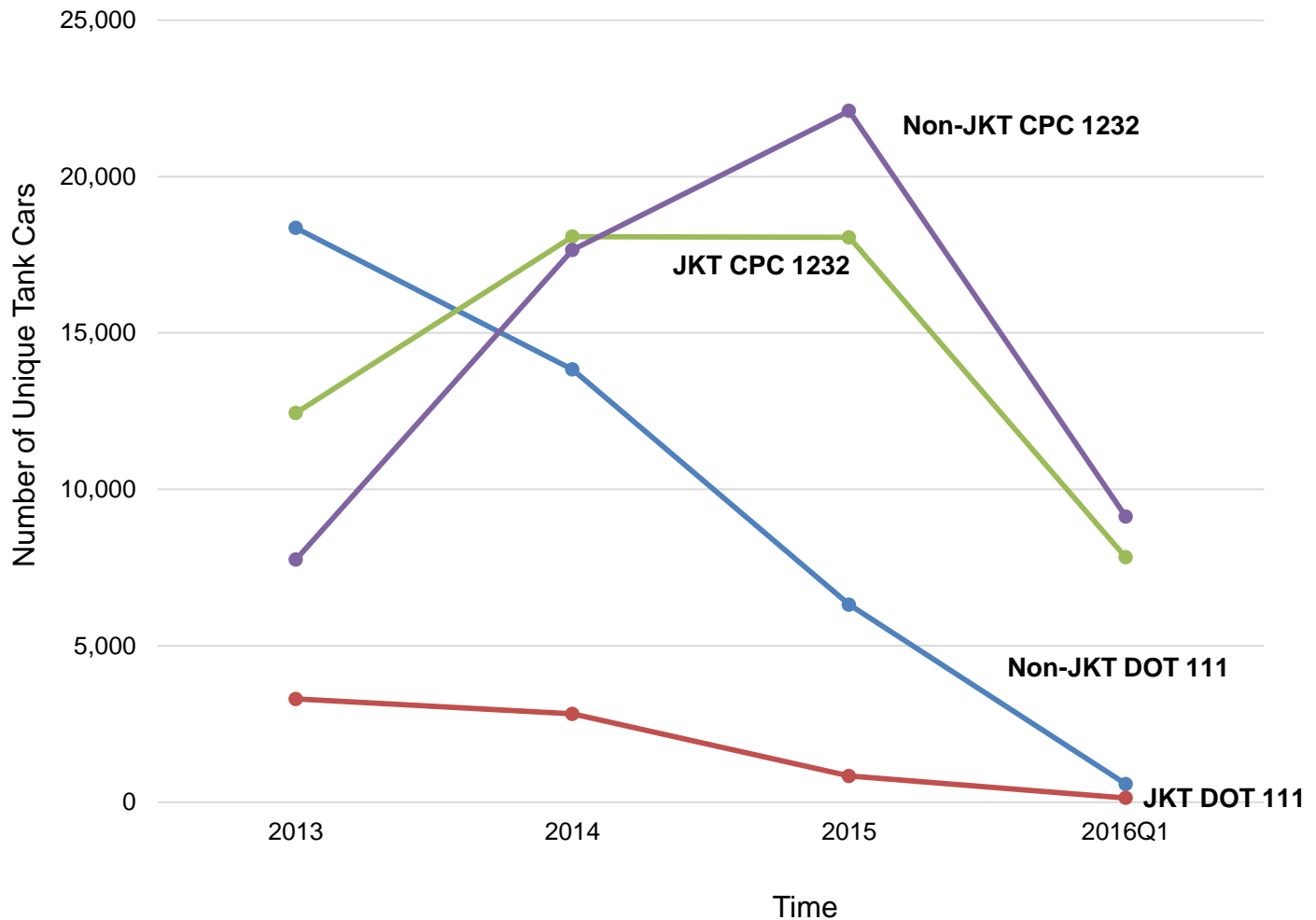
Type of Tank Car	2013	2014	2015	2016Q1
DOT 111	21,653	16,652	7,149	708
<i>Non-Jacketed</i>	18,355	13,831	6,316	576
<i>Jacketed</i>	3,298	2,821	833	132
CPC1232	20,197	35,733	40,155	16,958
<i>Non-Jacketed</i>	12,443	18,079	18,057	7,827
<i>Jacketed</i>	7,754	17,654	22,098	9,131
DOT 117	0	0	1,975	1,902
117J	0	0	1,843	1,786
117R	0	0	132	116
DOT 105	5	4	0	0
DOT 112	16	83	54	28
DOT 114	0	0	0	0
DOT 115	0	10	6	0
DOT 120	0	0	4	105
AAR 211	529	251	76	9
Total Pressure Cars	21	87	58	133
Total Non-Pressure	42,379	52,646	49,361	19,577
TOTAL	42,400	52,733	49,419	19,710

Fast Act deadlines for unrefined petroleum products

- 1/1/18 non-jacketed DOT-111's
- 3/1/18 jacketed DOT-111's
- 4/1/20 non-jacketed CPC-1232's
- 5/1/25 jacketed CPC-1232's



There Has Been a Nearly a 97% Reduction in the Number of DOT-111 Tank Cars Making at Least One Shipment Of Petroleum Crude Oil from 2013 - 1st Quarter 2016



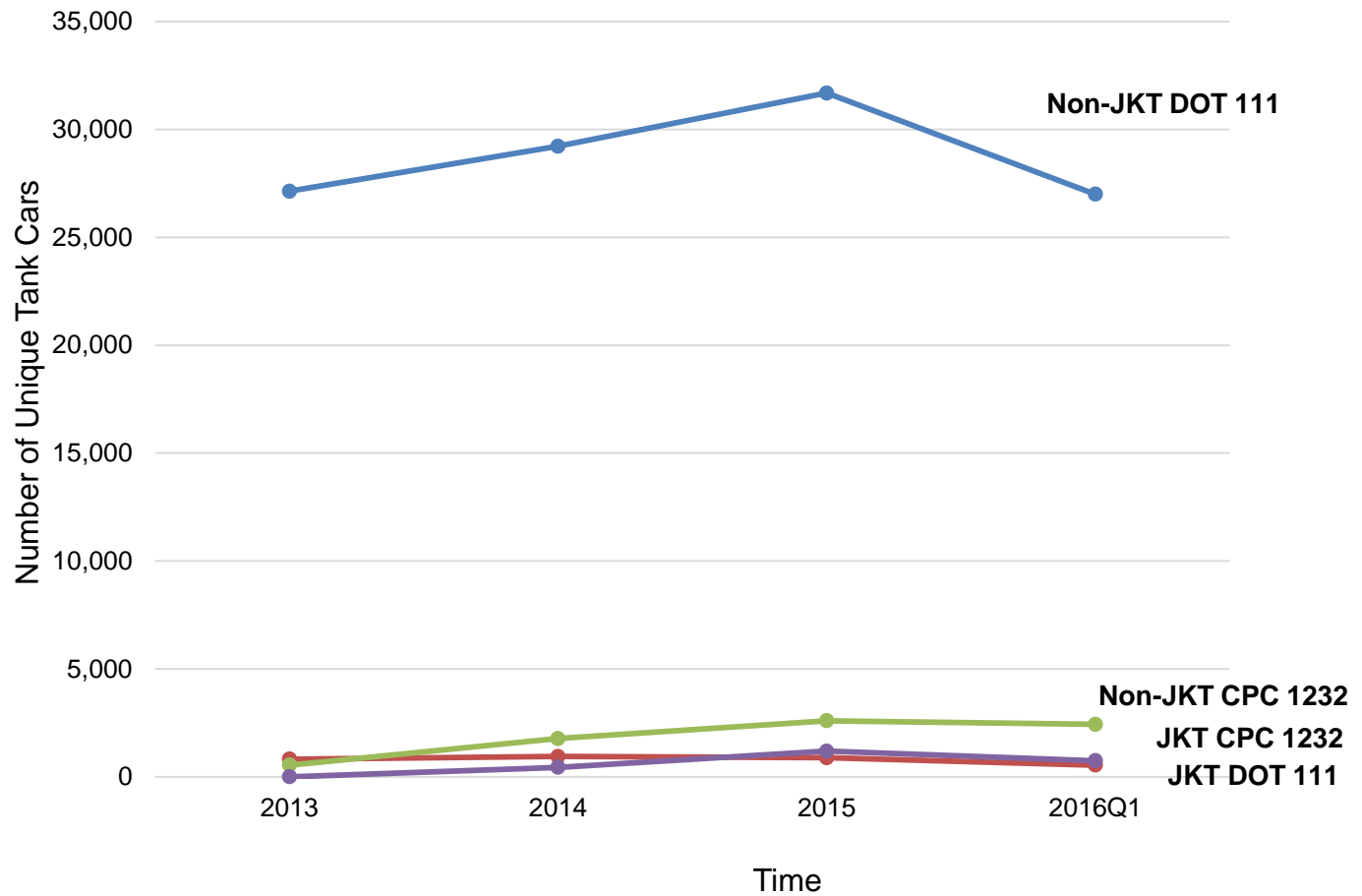
Number of Unique Tank Cars Making at Least One Shipment Of Ethanol by Year/Quarter 2013 - 2016

Type of Tank Car	2013	2014	2015	2016Q1
DOT 111	27,953	30,163	32,570	27,539
<i>Non-Jacketed</i>	27,138	29,222	31,683	26,998
<i>Jacketed</i>	815	941	887	541
CPC1232	545	2,216	3,790	3,178
<i>Non-Jacketed</i>	541	1,776	2,598	2,432
<i>Jacketed</i>	4	440	1,192	746
DOT 117	0	0	474	918
117J	0	0	467	918
117R	0	0	7	0
DOT 105	0	0	0	0
DOT 112	1	5	2	1
DOT 114	0	0	0	0
DOT 115	2	1	4	4
DOT 120	0	0	0	0
AAR 211	257	275	432	230
Total Pressure Cars	1	5	2	1
Total Non-Pressure	28,757	32,655	37,270	31,869
TOTAL	28,758	32,660	37,272	31,870

Fast Act deadlines: 5/1/23 non-jacketed & jacketed DOT-111's
for ethanol 7/1/23 non-jacketed CPC-1232's
5/1/25 jacketed CPC-1232's



Number of Unique Tank Cars Making at Least One Shipment Of Ethanol by Year/Quarter 2013 - 2016



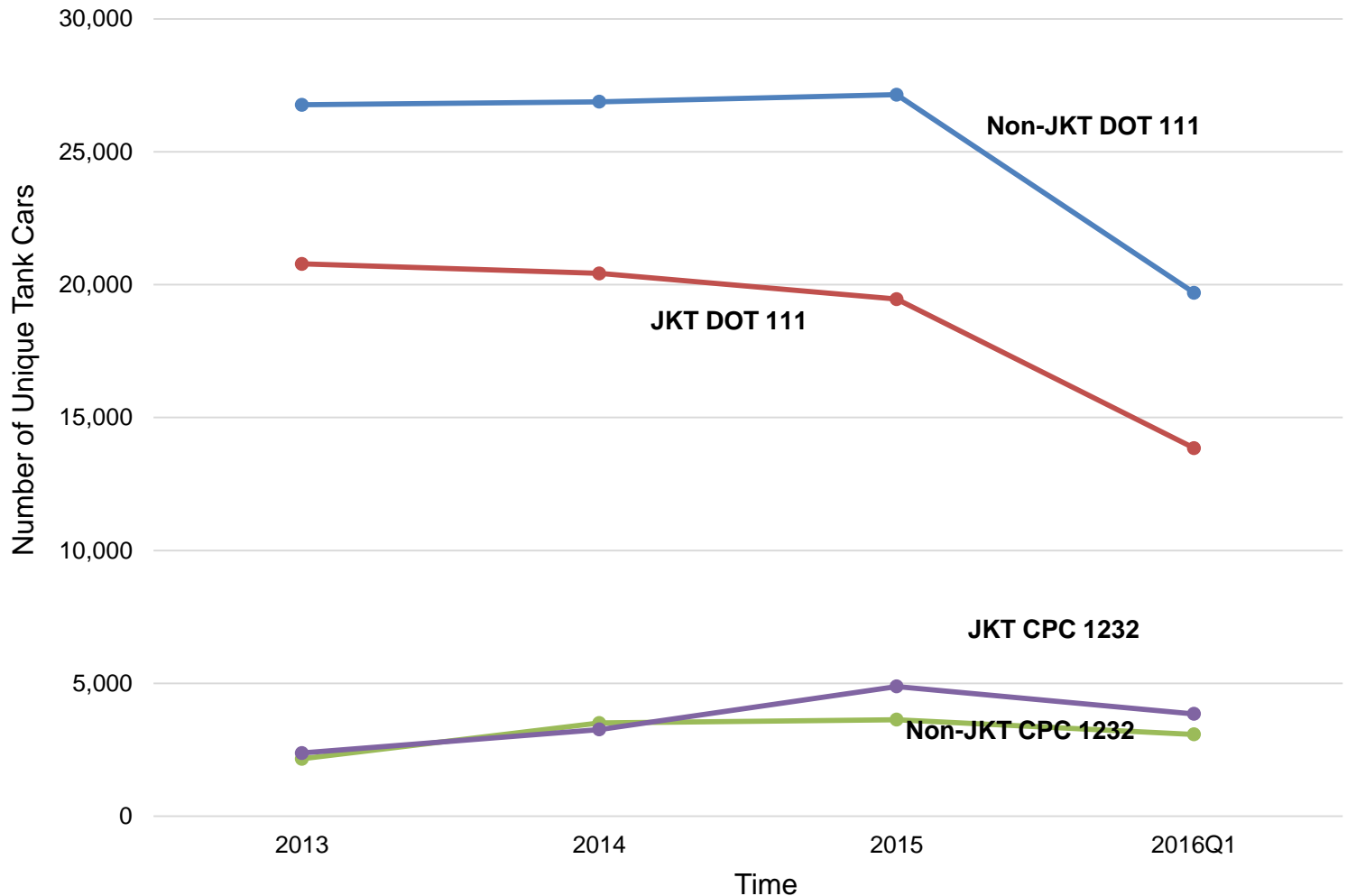
Number of Unique Tank Cars Making at Least One Shipment Of Other Flammable Liquids by Year/Quarter 2013 - 2016

Type of Tank Car	2013	2014	2015	2016Q1
DOT 111	47,550	47,303	46,601	33,545
<i>Non-Jacketed</i>	26,767	26,883	27,147	19,694
<i>Jacketed</i>	20,783	20,420	19,454	13,851
CPC1232	4,535	6,770	8,508	6,926
<i>Non-Jacketed</i>	2,161	3,509	3,629	3,076
<i>Jacketed</i>	2,374	3,261	4,879	3,850
DOT 117	0	0	165	412
117J	0	0	159	391
117R	0	0	6	21
DOT 105	2,940	3,055	2,998	2,428
DOT 112	5,535	5,795	4,965	2,425
DOT 114	1	3	3	1
DOT 115	20	30	26	18
DOT 120	23	23	23	37
AAR 211	3,994	3,866	4,305	3,173
Total Pressure Cars	8,499	8,876	7,989	4,891
Total Non-Pressure	56,099	57,969	59,605	44,074
TOTAL	64,598	66,845	67,594	48,965

Fast Act Deadlines: 5/1/25 for Packing Group I
 For other FL's 5/1/29 Packing Groups II & III



Number of Unique Tank Cars Making at Least One Shipment Of Other Flammable Liquids by Year/Quarter 2013 - 2016



Current Status for Baseline Fleet (Jan 2013 to March 2016) (2016Q1)

	Jacketed DOT 111	Non- Jacketed DOT 111	Jacket CPC1232	Non- Jacketed CPC1232	DOT 117J	DOT 117R	Other 105, 112, 114, 115, 120, 211	Row Total
In crude oil service*	132	576	9,131	7,827	1,786	116	142	19,710
In ethanol service*	541	26,998	746	2,432	918	0	235	31,870
Other Flammable Liquid Service*	13,851	19,694	3,850	3,076	391	21	8,082	48,995
Subtotal Flammable Liquids*	14,510	47,099	13,670	13,300	3,088	137	8,459	100,263
In non-flammable liquid hazmat service*	4,799	3,307	2,414	133	19	0	8,412	19,084
Other (non haz, inactive, removed, unknown)	14,591	26,391	18,208	10,512	533	436	13,446	65,033
Total Number of Cars	28,218	72,837	31,332	23,748	3,604	573	21,296	181,608
Additional Information for ALL CPC1232 and DOT-117 Cars that did not make flammable liquid shipments								
Cars transported at least one non-flammable liquid hazmat between 1/13-3/16			4,896	1,873	207	0		
Cars transported at least one non-hazmat shipment between 1/13-3/16			1,244	66	39	0		
Cars did not transport anything between Jan 2013 and March 2016			8,911	767	3,345	0		
Total Number of Cars			46,383	26,454	7,195	573		

* Made at least one shipment in the first quarter of 2016

** Unknown means the tank cars are active in the UMLER database but did not make any shipment in the first quarter of 2016

*** The column is not additive because one tank car can make at least one shipment in multiple commodity categories



Tank Cars Meeting DOT-117 Specification as of June 30, 2016

Status Code	Stenciled Shipping Spec	Count Of Stenciled Shipping Spec
A	117J100W	8,573
A	117R100W	980
A	120J200W	764
Total Active		10,317
P	117J100W	916
P	117R100W	47
P	120J200W	493
Total Preregistered		1,456
Total All		11,773

A - ACTIVE

I - INACTIVE

P - PRE-REGISTERED



Based on 1st Quarter 2016 Numbers the Number of Cars that Need to be Replaced/Retrofit by Service/Date

Crude Oil	Date	Number
Non-jacketed DOT-111's	1/1/2018	576
Jacketed DOT-111's	3/1/2018	132
Non-jacketedf CPC-1232's	4/1/2020	7,827
Jacketed CPC-1232's	5/1/2025	9,131
Total Crude Oil		17,666
Ethanol		
Jacketed and Non-jacketed DOT-111's	5/1/2023	27,539
Non-jacketed CPC-1232's	7/1/2023	2,432
Jacketed CPC-1232's	5/1/2025	746
Total Ethanol		30,717
Other flammable liquids		
Packing Group I	5/1/2025	
Packing Groups I & III	5/1/2029	
Total Other Flammable Liquids		40,471
Total all		88,854
Average of 6,835 cars per year to 2029		



Thank You

Questions?

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July 13, 2016

