

**Regulatory Update
Federal Railroad Administration**

Personnel

Lisa Matsinger started on April 11, 2011 as a Hazardous Materials specialist in Washington, D.C. Lisa has been with the FRA for 21 years as a Field Inspector in Region 2, covering Philadelphia and then Baltimore and the surrounding area. In addition to her time on temporary assignment at HQ dealing with issues such as OTMA and special permits, Lisa brings a wealth of experience in hazardous materials, accident/incident investigations, and railroad operation. Lisa will primarily be working on special permit reviews and OTMAs as well as providing support to regional efforts.

Federal Register Notice

HM-233A permitted the operation of tank cars at a gross rail load (GRL) of 286K, but also required tank car owners to obtain approval of the FRA. On January 25, 2011 the FRA published a Notice in the Federal Register (FR) outlining the specification requirements for tank cars operating at 286K GRL. As long as these requirements are met a tank car owner does not need to request approval from the FRA, rather they need only provide proof of compliance upon request. The FRA Notice outlines three groups of cars; those previously operating under a special permit, existing cars to be upgraded, and new cars. Tank cars with specification outside of the requirements of the FR Notice are not necessarily precluded from operating the tank car at a 286K GRL.

Frequently asked questions regarding the FR notice

- Are head shields required on existing cars – If cars are not equipped with head shields send request for approval to the FRA. Per M-1002, 2.5 cars ordered after 2003 must have head shields
- The FR Notice indicates a requirement for A572 jacket material. Is this not accurate. A572 is not made in sheet. Typically used A1011, A-36 (minimum tensile strength of 50 ksi), or similar is acceptable.
- Can we build a tank car of stainless steel and operate it at 286K? You must submit a request for approval. The request must provide a technical justification demonstrating an equivalent level of safety.
- Are reclosing PRV required for existing cars? Yes.
- M-1002 requires a minimum thickness of ½ inch. The FR Notice requires a minimum thickness of 7/16". If we build a car to the FR Notice requirements will the AAR accept the design? Yes however, the AAR will only allow the car to operate in restricted interchange. FRA has discussed changing this requirement FR Notice to align with the AAR standards.
- Does the FR Notice apply to tank cars built to a DOT specification but stenciled to an AAR specification? In 2005, PHSMA issued a letter of interpretation stating that specification stamped on a tank car (now on the spec plate) take precedence over the stenciled spec when it is used to determine the maintenance and operational requirements for a tank car. As such, the answer to the question is yes.

One Time Movement Approvals

FRA has initiated a review of the One Time Movement Approval Process. The review will be conducted in the form of a peer review and public comment. The peer review is currently underway. The peer review team is made up of an engineer and Specialist from PHMSA and a lawyer and economist from

FRA. It is hoped the range of positions will provide different and valuable perspective on the process. The peer review team will be looking for gaps in the review process where justification for issuance of an OTMA is adequately documented. They will be looking at OTMAs issued in 2010. Those issued before 2010 are not a result of the new process that include engineering review of defects.

Docket FRA-2011-0004 was opened to announce a public meeting to discuss “Improving the Safety of Railroad Transportation of Hazardous Materials” and solicit written comments from interested parties. The docket closed March 24, 2011. The public meeting was held February 22, 2011 in Washington, D.C. Participants in the meeting included representatives from Industry organizations (AAR, Chlorine Institute, ACC), Organized Labor (BMW and BLET), tank car owners (UTC, Trinity, ARL, GATX, GE), shippers, and Railroads (UP). Suggestions provided at the meeting focused on improving the efficiency of the process while maintaining the intent of the OTMA process; safety, notification of movement of a tank car not meeting the Hazardous Material Regulations and gathering data to understand the cause of the defect(s). FRA will begin reviewing comments submitted to the Docket.

There have been three questions related to OTMAs that require special attention.

If a tank car found to be defective meets the requirements of the FR Notice, is an OTMA required if it is overloaded? Tank cars overloaded by volume pose a threat to safety other than weight restrictions. It has been, and remains FRA policy to deny OTMA request for movement of tank cars overloaded by volume. If a tank car is stenciled with a tare weight and load limit that adds up to 263,000 pounds, that is the allowable GRL. It makes no difference if the car is capable of 286,000 pound and meets the requirements of the FR Notice. Therefore, tank cars overloaded by weigh (relative to the stenciled information) must move under an OTMA.

If a tank car found to be defective is loaded or contains residual non-regulated material is an OTMA required? A tank car built to a DOT specification must be maintained and used in compliance with the HMR and therefore, can only move under an OTMA.

If the tank car found to be defective is stenciled AAR specification, but carrying a regulated material, is an OTMA required? If the tank car is carrying a regulated material, the requirements of the HMR apply and the car can only move under an OTMA.

Data

As of April 14, 2011 the FRA had received 289 requests for and issued 266 OTMAs. Table 1 provides a summary of the defects on tank cars for which OTMAs have been requested in 2011. In addition, Table 1 shows a comparison of the percentage of the total requests each general defect type accounted for in the three previous years.

Table 1: 2011 OTMA Defects and comparison to previous annual totals

<i>Defect</i>	<i>Number of defects (2011)</i>	<i>2011</i>	<i>2010</i>	<i>2009</i>	<i>2008</i>
Service Equip Failure	166	57%	65%	66%	63%
Overload by weight	34	12%	9%	11%	9%
Jacket Damage	22	8%	4%	3%	5%

Other	17	6%	5%	6%	4%
Tank Damage	13	4%	3%	4%	8%
Leakproof Test	11	4%	5%	5%	2%
Derailment Caused Damage	8	3%	3%	2%	6%
Heater Coil Failure - Internal	7	2%	1%	1%	1%
Stub sill weld cracks	6	2%	2%	1%	--
Heater Coil Failure - External	2	1%	1%	0%	0%
Overdue For Test	2	1%	1%	1%	2%
Overload by volume	1	0%	0%	--	0%
Hopper Car - shell crack	0	--	--	0%	--

Table 2 provides an annual comparison of the percentage of OTMAs issued per service equipment component. The consistency of the data for 2011 and the previous three years indicates the bottom outlet valves and top unloading valve have the highest defect rate.

Table 2: Percentage of total OTMAs for service equipment components

<i>Defect</i>	<i>2011</i>	<i>2010</i>	<i>2009</i>	<i>2008</i>
Bottom Outlet Valve:	42%	46%	38%	40%
Gauging Device:	11%	6%	4%	4%
Gaskets:	5%	1%	2%	5%
Loading/Unloading Valves:	15%	16%	14%	15%
Nozzles/Manway:	3%	3%	6%	5%
Safety Relief Valve:	3%	8%	9%	9%
Sample Valve:	8%	4%	3%	2%
Thermometer Well:	2%	1%	2%	2%
Vacuum Relief Valve:	3%	5%	10%	9%
Vapor Vent Line/Valve:	4%	4%	5%	4%
Manway Cover Bolt:	3%	7%	5%	5%
Pressure Relief Device-Non valve:	1%	0%	0%	----

Non-Accident Releases

Since 2004 the annual number of NARs has leveled out, in spite of the significant efforts of the NAR Task Group and other segments of the industry. Based on the data from the first quarter of 2011, it seems this trend will continue. This is a cause of great concern for the FRA, who like many other believe all NARS are preventable. FRA has been analyzing the NAR data. In addition to keeping count and identifying the primary sources of NARS, we also identified companies with the high number of NARS. As an alternative means of obtaining compliance, FRA will be notifying the Chief Compliance Officer of these companies. Further, during the review of a special permit application, the applicants undergo a fitness evaluation, which is used to determine if the applicant is complying with the requirements of the Special Permit. The parameters evaluated include compliance and safety history, not just in rail, but all modes of transportation. The criteria for safety and compliance incidents that will trigger a field audit are detailed in the Hazardous Materials Compliance Manual. The HM Compliance manual will be posted soon and posted at http://www.fra.dot.gov/rrs/pages/fp_337.shtml. NARS are an important component of the safety history and can lead to an unfavorable recommendation to PHMSA.

In an effort to work with the regulated community to reduce NARS, FRA's Region 7 is hosting a Hazardous Materials Conference. The conference is intended to provide an opportunity for regulators,

shippers, suppliers, and contractors involved in loading and unloading tank cars containing hazardous materials to interact, share experiences, and teach one another how to overcome problems that lead to NARS. The conference is scheduled for June 13-17, and will be held in Reno, Nevada.

Peppermill Resort Spa Casino
2707 South Virginia Street
Reno, Nevada 89502
1-800-282-2444 or 1-775-689-7215.

If you are interested please contact Irene Hernandez to register.

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FRA's Tank Car Program

The organization of the FRA's Tank Car program is as follows. Bill Schoonover is the Staff Director and has appointed Tom Phemister the manager of the program. Four Tank Car Facility Quality Assurance Auditors report to Tom: Randy Keltz, Sam Ryder, Larry Strouse, and Vernon Walker. The Team is supported by engineers of the Hazardous Material Division as well as lawyers from the Office of Chief Counsel. The team was created because the FRA determined its approach to obtaining compliance had become ineffective. Creating a team with a different skill set and audit approach/methodology will provide the initiative within the Agency and industry to achieve the compliance goal. The team implemented an audit plan in May 2010. The objective of the audit plan was to perform focused audits based on 5800 and OTMA data. In addition, the team has set up a schedule to audit every registered and certified facility at least once every three years.

Since its inception, the team has audited 111 of the approximate 350 registered and certified facilities. Twenty two of the facilities have voluntarily withdrawn their AAR registration. It is important to note that the FRA does not revoke registrations nor do we require or even suggest withdrawal of a facility's registrations or certification. The team simply points out the current level of non-compliance and explains how compliance can be achieved. It is up to an individual facility to decide if they have the resources, knowledge and/or desire to comply.

Data from the first year of audits point to specific problematic issues. The three issues with the highest non-conformity count are function specific training, quality assurance program training, and identification and traceability of materials along with incoming inspections. Table 3 provides a total by regulation of the non-conformities identified at the tank car facilities performed since May 2011.

Table 3: Non-Conformities identified tank car facility audits

Regulation	Regulation Description	Total by Regulation
179.7 (a)	QA Program approved by AAR	10
179.7 (a)(1)	Nonconformity of finished product	10
179.7 (a)(2)	Detecting nonconformity	28

179.7 (a)(3)	Prevent nonconformity from reoccurring	4
179.7 (b)(1)	QA Authority	8
179.7 (b)(2)	QA Organization	4
179.7 (b)(3)	Document Control	47
179.7 (b)(4)	I.D. & Traceability / Incoming Inspection	84
179.7 (b)(5)	Inspection and Test Plan	14
179.7 (b)(6)	Process Control	36
179.7 (b)(7)	Nonconformity Control	5
179.7 (b)(8)	Specifications for Tank Cars Apply (M-1002)	43
179.7 (b)(9)	NDE Personnel Qualifications	10
179.7 (b)(10)	Process Capability	6
179.7 (b)(11)	Measure & Test Equipment	54
179.7 (b)(12)	Quality Records	11
179.7 (c)	NDE Personnel Qualifications	18
179.7 (d)	Provide Work Instructions	21
179.7 (e)	Training on QA Program	169
179.7 (f)	Operating With a QA Program	1
Misc 172	Function Specific Training	189
Misc 179	Tank Car Regulations	0
Misc 180	Qualification Requirements	16

Tank Car Program Special Project

In October 2010, FRA reported we have been working with industry on lining qualification interval validation, data collection and analysis. We continue to work with two major rubber lining owners with a goal of both companies developing a rational inspection interval based on qualified inspection procedures, data collected and analyzed. We expect to see some movement on this within 3-6 months.

Safety Issues

Union Tank Car (UTC) has identified tank cars equipped with the ZBN sill design that require modification to the stub sill. To that end UTC has developed and implemented within the UTC network of tank car facilities a Head Brace Re-Weld Program. Modification of UTC-owned tank cars is ongoing however sold tank car equipped with the ZBN sill remain a concern. FRA provided UTC with a list of owners of tank cars with ZBN sills and they are preparing letters to those owners indicating the availability of the procedure and direction for obtaining a copy of the procedure. For the interested owners tank cars in the following categories should be aware the letter is coming and that you should contact UTC for a copy of the procedure.

- Pressure cars 1970-81, 1986
- General purpose cars 1970-73, 1977-84

In the meantime, it is suggested that tank car owner inspect these sills at frequent intervals. However, inspection is difficult because the origin of the defect leading to the documented failures is near the head brace and most of the cars are jacketed. Look for tell-tale signs outside of the jacket that may provide indications of defects behind the jacket. CPC-1218 (MA-0123) provide a list of damage to the sill that if encountered should result in the car being sent to a shop for repair/modification.

In addition, there have been 12 recent failures of ZBN sills at the inboard radius of the key slot. The cars were manufactured by UTC and Procor. All but one of these failures has occurred in the months between November and February in Canada and these failure and contributing factors remain the focus of a current investigation. Based on the broken sills inspected to date (sample of four sills are in the

Canadian TSB lab in Ottawa), the defect initiating catastrophic failure is very small and difficult to detect. Regardless, frequent inspection of this area is also recommended. All but two of the failure occurred in sill of cars constructed in 1989. Tank cars of this vintage have sill with a fabricated front lug.

Investigations

On February 6, 2011 an ethanol unit train derailed near Arcadia, OH. Thirty four cars derailed; two buffer cars and 32 tank cars, all containing ethanol. The cause of the derailment is the subject of an ongoing investigation. All of the cars lost product through venting, valve damage, puncture, or rupture. Twenty-eight of the tank cars (shell and/or head) were breached; 9 head punctures, 15 shell punctures, 3 with head and shell punctures, one shell tore open with sill, 6 cars ruptured (different stages of a sudden loss of containment of a super heated fluid). The cars ranged in age from 28 to 3 years and were representative of three builders.

Representatives of the Hazardous Materials Division were onsite from the early stages of the response. Using the available information all of the cars, and their respective location in the final pile up were identified and failure modes determined. On a subsequent trip to the site additional information was gathered, such as thickness of the shell along fracture surfaces and the transverse thinning rate on the tank car that ruptured. In addition, tank cars, sections and coupons were identified for collection and shipment to TTC for storage. This incident provided great insight in to the obstacles faced when attempting to document damage during and after the cleanup of a derailment. These insights will be incorporated into the course material for the Tank Car Forensics Team.

Posting - http://www.fra.dot.gov/rrs/pages/fp_1803.shtml