



U.S. Department  
of Transportation

Pipeline and Hazardous  
Materials Safety  
Administration

1200 New Jersey Avenue, SE  
Washington, D.C. 20590

OCT 30 2007

C. Allen Foster  
Greenberg Traurig, LLP  
Suite 500  
800 Connecticut Avenue, NW  
Washington, DC 20006

Ref. No.: 07-0169

Dear Mr. Foster:

This responds to your July 31, 2007 letter concerning regulatory compliance issues associated with the attachment of mounting pads for internal baffle support clips on MC 331 cargo tank motor vehicles manufactured by Trinity Industries, Inc. (Trinity). Specifically, you ask us to reconsider our May 2, 2006 interpretation (Ref. No. 06-0046) on this issue. That interpretation states that, in accordance with § 178.337-3(g)(3) of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180), the welding of any appurtenance to the inside or outside of a cargo tank wall must be made by attachment of a mounting pad so that there will be no adverse effect upon the lading retention integrity of the cargo tank if any force less than that prescribed in § 178.337-3(b)(1) is applied from any direction.

We have reviewed our May 2, 2006 interpretation and the information provided in your letter. We continue to believe that our interpretation is consistent with the language and intent of the regulatory requirement set forth in § 177.337-3(g)(3). However, you assert this requirement is not needed to ensure the integrity of a cargo tank as Trinity has manufactured thousands of cargo tanks, constructed with the internal baffle support clips welded directly to the cargo tank shell without pads, without cracking of the shell material or cracking of welds resulting from attachment of the baffle support clips. Based on Trinity's experience, we plan to reassess the requirement in § 177.337-3(g)(3) as part of an upcoming cargo tank rulemaking.

Given the circumstances outlined in your letter, we have determined that Trinity cargo tanks constructed with internal baffle support clips welded directly to the inside surface of the cargo tank shell should be permitted to continue in operation, subject to provisions of a special permit issued in accordance with Subpart B of 49 CFR Part 107, while we complete our reassessment of the requirements in § 177.337-3(g). The special permit – termed a “manufacture, mark, and sale” special permit – would establish conditions under which the cargo tank motor vehicles could continue in service without replacing the existing baffle clips. Such a special permit could specify repair procedures to address stress cracking resulting from fatigue or repairs that require welding directly to the cargo tank wall and periodic inspection requirements. General information on submitting a special permit application is provided in 49 CFR 107.105. For additional information regarding the content of your special permit application, please



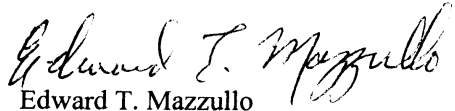
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178.337-3(g)

contact Delmer Billings, Director, Office of Hazardous Materials Special Permits and Approvals,  
at (202) 366-4511.

If you have further questions, please do not hesitate to contact this office.

Sincerely,

A handwritten signature in cursive script that reads "Edward T. Mazzullo". The signature is written in black ink and is positioned above the printed name and title.

Edward T. Mazzullo  
Director, Office of Hazardous Materials Standards

# Greenberg Traurig

C. Allen Foster  
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FOSTERA@gtlaw.com

Supko  
§ 178.337-3(g)  
Cargo Tanks  
07-0169

July 31, 2007

## VIA COURIER

Ms. Susan Gorsky  
U.S. Department of Transportation  
1200 New Jersey, S.E.  
Washington, D.C. 20590

**Re: Meeting between Trinity Industries & DOT, July 10, 2007**

Dear Ms. Gorsky:

We appreciate the opportunity to meet with you and your group and to express to you our concerns over any Notice which might issue to the industry concerning the substance of Mr. Gale's letter of May 2, 2006, Ref. No. 06-0046 (the "Interpretation").

As we discussed at our meeting on July 10, 2007, we submit the following written comments for your consideration:

1. This matter is not a safety issue. Trinity Industries, Inc. ("Trinity") began manufacturing Cargo Tank Motor Vehicles ("CTMVs") and marketing them to the industry in the 1950's. Trinity discontinued manufacturing the complete CTMVs in the mid-1970's and, since that time, has manufactured the Cargo Tanks ("CTs") only. Trinity estimates that, during its history in this industry segment, it has manufactured at least two thousand CTMVs or TCs comparable to the model involved in the Flying J incident which prompted the instant discussion.

During its entire manufacturing experience (until the DOT advisory in May, 2006), Trinity manufactured the CTs (whether as a separate product or as part of a CTMV) in the same manner, to wit: by welding the internal baffle support clips directly to the inside surface of the shell without the use of pads. Since the DOT advisory, Trinity has (while disagreeing with the need) installed the clips using pads.<sup>1</sup> Approximately, 400 tanks have been manufactured with pads supporting the clips.

<sup>1</sup> This change by Trinity resolves the issue for its current and future CTs and customers. Further, at the present time, Trinity merely installs the clips on the pads. If the customer desires baffles, they are installed by a third party. As a result, Trinity does not know which TCs have baffles and which do not.

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BOCA RATON  
BOSTON  
BRUSSELS\*  
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HOUSTON  
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PHOENIX  
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During this experience of thousands of cargo tanks in service during 50 years of production, Trinity has no knowledge, directly or indirectly, if any cracking of the shell material or cracking of welds resulting from or related to the attachment of the baffle support clip directly to the shell without pads.

In addition, Trinity contracted with an independent engineering and consulting company, ADAPCO, to determine the loadings on the baffle clips. ADAPCO measured the loads experienced in a sudden braking event and Trinity submitted them to ATECH Engineering to determine whether these loads posed a potential for failure. ATECH determined that even loads significantly higher were less than the maximum values allowed by the ASME code or by 49CFR 178.337. The ATECH certification is attached.

We would also point out that, as to the Flying J incident, there was no testing of any kind to determine the cause of the crack in the shell wall of the CT. The crack could have been caused by one or more reasons, including the welding process, contaminated product inside the CT, or a combination of these or other reasons. Given the fact that the CT was only a few months old, fatigue seems highly unlikely.

2. Thus, this is a regulatory compliance issue. In that connection, Trinity does not believe that the current regulations govern, or even contemplate, the attachment of baffles to the interior surface of CTs. First, all examples of attachments in 178.337-3(g) are external in nature; indeed, this regulation makes no reference to any internal attachments at all. Furthermore, the design criteria for pads in §178.337-3(g)(3) (ii) cannot apply to a pad attached to the inside of the tank (because the inside radius of the pad cannot be determined by reference to the outside radius of the tank and, if it could, it could not equal the outside radius of the tank). Third, even if the provisions of §178.337-3 were ambiguous in whether they applied to attachments on the inside of the CTs, §178.337-5, which specifically address baffles, bulkheads and ring stiffness (all features on the inside of CTs), provides that they are “not a specification requirement.” The applicable rule of statutory and regulatory construction is that the specific prevails over the general and, as result, there is no requirement concerning baffles.

All these factors are consistent with the conclusion expressed in the email dated February 21, 2006, from Mr. Shelton to Mr. Solomey, that, for the current regulation to cover the baffles on the inside of the CTs, it would have to be amended [our copy of the email does not include the text of the entire “Recommended Regulations Text”].

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3. Requested action. Trinity respectfully requests that the DOT reconsider the Interpretation of May 2, 2006.<sup>2</sup> In particular, Trinity requests that the Interpretation be rescinded on the grounds that it is not supported by the existing regulations and is causing cargo tanks to be removed from service without appropriate authority to support it.<sup>3</sup>

Further, the operating history of Trinity's MCTVs and CTs indicate that there is no immediate safety concern necessitating such immediate action. To the extent that the Department ultimately deems that, despite the absence of any history of safety concerns, internal pads should be utilized in connection with the installation of baffles, that conclusion should be expressed in an amended regulation of prospective application, established through the formal notice of rule making process, including a comment period.

Again, thank you for the opportunity to meet with you and to share our views.

Yours very truly,



C. Allen Foster  
Representing Trinity Industries, Inc.

CAF:lcd

cc: James O. Simmons  
Edward Muzzullo

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<sup>2</sup> In this connection, Trinity also respectfully points out that the instant discussions and exchange of views were initiated by Trinity in its continuing cooperative relationship with DOT.

<sup>3</sup> Trinity estimates that the cost to the TC owner of removing existing clips, installing pads and reinstalling clips would run between \$5,000-10,000 per TC. Trinity submits that to impose such costs on the industry without a demonstrated safety concern is unreasonable.

U.S Department  
Of Transportation  
Pipeline and  
Hazardous Materials  
Safety Administration  
**MAY** 2 2006

## Memorandum

Ref. No. 06-0046

Subject: ~~Cargo Tank~~ Motor Vehicle

From:  John A. Gale  
Chief, Standards Development  
Office of Hazardous Materials Standards, OHMS

To: Danny Shelton  
Hazardous Materials Division  
Federal Motor Carrier Safety Administration

This is in response to your letter concerning requirements in the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) for specification MC 331 cargo tank motor vehicles.

Requirements for the design, construction, and installation of attachments and appurtenances for MC 331 cargo tanks are set forth in § 178.337-3(g). These requirements became effective September 1, 1995. For MC 331 cargo tanks manufactured after September 1, 1995, § 178.337-3(g) requires an attachment, appurtenance, structural support member, or accident protection device to conform to the following requirements:

1. Appurtenances and other accessories must be attached to structural members, the suspension sub-frame, accident protection structures, or external circumferential reinforcement devices, when practicable.
2. A lightweight attachment to the cargo tank wall such as a conduit clip, brake line clip, skirting structure, lampmounting bracket, or placard holder must be of a construction having lesser strength than the cargo tank wall materials and may not be more than 72 percent of the thickness of the material to which it is attached. The lightweight attachment may be secured directly to the cargo tank wall if the device is designed and installed so that, if damaged, it will not affect the lading retention integrity of the tank. A lightweight attachment must be secured to the cargo tank shell or head by a continuous weld to preclude formation of pockets that may become sites for corrosion. Attachments meeting the requirements of this paragraph are not authorized for cargo tanks constructed under part UHT in Section VIII Division 1 of the ASME Code.
3. Except as indicated above the welding of any appurtenance to the inside or outside of the cargo tank wall must be made by attachment of a mounting pad so that there will be no adverse effect upon the lading retention integrity of the cargo tank if any force less than that prescribed in § 178.337-3(b)(1) is applied from any direction. The

thickness of the mounting pad may not be less than that of the shell wall or head wall to which it is attached, and not more than 1.5 times the shell or head thickness. However, a pad with a minimum thickness of 0.25 inch may be used when the shell or head thickness is over 0.25 inch. If weep holes or tell-tale holes are used, the pad must be drilled or punched at the lowest point before it is welded to the tank.

An MC 331 cargo tank manufactured after September 1, 1995, that does not conform to these requirements must be removed from service until appropriate repairs or modifications are made. For MC 331 cargo tanks manufactured prior to September 1, 1995, appurtenances and accessories must be attached to the tank in accordance with the specification in effect at the time of manufacture. An MC 331 cargo tank that does not conform to the specification in effect at the time it was manufactured must be removed from service until appropriate repairs or modifications are made. There are no provisions in the HMR for a non-conforming MC 331 cargo tank to remain in service until the next pressure test or re-chassis is done, regardless of its date of manufacture.

To perform repairs on MC 331 cargo tanks requiring welding to the cargo tank shell, a facility must hold a valid National Board Certificate of Authorization for use of the "R" stamp and be registered in accordance with 49 CFR Part 107. Any repair involving welding on the shell or head must be certified by a Registered Inspector. Additionally, if a repair results in a design change, the design must be approved by a Design Certifying Engineer, and a Registered Inspector must certify that the cargo tank has been repaired and tested in accordance with the applicable specification.

Section 180.413 specifies that repair work on an MC 331 cargo tank must be performed in accordance with the National Board Inspection Code (NBIC) and the Compressed Gas Association's Technical Bulletin, TB-2. Since MC 331 cargo tanks are American Society of Mechanical Engineers (ASME) coded vessels, the Pipeline and Hazardous Materials Safety Administration requires full compliance with the ASME Code and NBIC except as modified by 49 CFR Parts 178 and 180 and includes but is not limited to provisions for inspections, inspectors and marking. The suitability of any repair affecting the structural integrity of the cargo tank must be determined by the testing prescribed in the applicable specification. See § 180.413.

I hope this information is helpful. Please contact us if you require additional assistance

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Greg McRae  
Engineering and Technical Director  
Trinity Containers LLC  
2525 Stemmons Freeway  
Dallas, TX 75207  
214 589 8559                      phone  
greg.mcrae@trin.net            email

Thursday, July 19, 2007

Dear Mr. McRae

Having modeled and analyzed a baffle clip configuration of the type used by Trinity Industries for the purpose of determining whether the cargo tank was adequate to withstand baffle clip loads having an estimated value of 155 lb directed longitudinally and parallel with the tank axis, I have determined that both the highest concentrated principal stress values as well as the average principal stress values

- in the cargo tank shell adjacent to the clip attachment; and
- in the deposited fillet weld filler material; and
- in the baffle clip at point of highest stress concentration,

are significantly less than the maximum values allowed by the ASME code or by 49 CFR 178.337 for materials having the described mechanical properties. The model I used for analysis is that of a baffle clip connected by fillet weld attachment to the inside of a ¼ inch thick MC331 cargo tank vessel shell. The material properties I used in the analysis were consistent with properties of SA-517 quenched and tempered steel plate for the baffle clip construction and the tank wall, and with E11018 weld rod material for the fillet weld used to attach the clip to the tank wall.

At the time of my analysis, I believed that the maximum load value to which any baffle clip would be subjected would not exceed the estimated value of 155 lb. However, after having learned that the value actually determined from liquid surge analysis was only 135.1 lbs, it is apparent that my conclusion regarding the effects of surge load on the baffle attachment configuration described is conservative.

Ed Mansell

ATECH Engineering  
DOT Registered DCE, CT # 8680

cc, Tom Rogers, Container Technology Inc.