



**VEHICLE FACTORS GROUP CHAIRMAN'S  
FACTUAL REPORT**

**Vehicle Attachment 4 – Peterbilt Truck Tractor**

**THP Post-Crash Report**

**MULTIPLE VEHICLE ACCIDENT  
Chattanooga, TN**

**HWY15MH009**

**(27 pages)**

# DRIVER/VEHICLE EXAMINATION REPORT

Aspen 2.14.1.1

**Tennessee Department of Safety**  
**Commercial Vehicle Division**  
**1150 Foster Avenue**  
**Nashville, TN 37243**  
**Phone: (615)743-4990 Fax: (615)253-2278**

**Report Number:** TNTBZT000568  
**Inspection Date:** 06/25/2015  
**Start:** 8:00:00 PM CT **End:** 2:37:03 PM CT  
**Inspection Level:** I - Full  
**HM Inspection Type:** None

COOL RUNNINGS EXPRESS INC

LONDON, KY 40743

USDOT#: 01083675

MC/MX#: 449085

State#:

Location: DENTONS WRECKER SERVICE

Highway: BONNIE OAKS EXIT

County: HAMILTON, TN

Phone#: (606)864-5797

Fax#:

MilePost:

Origin: HAINES CITY, FL

Destination: CHATTANOOGA, TN

Driver: BREWER, BENJAMIN S

License#: [REDACTED]

State: KY

Date of Birth: [REDACTED]

CoDriver:

License#:

State:

Date of Birth:

Shipper:

Bill of Lading:

Cargo: EMPTY

## VEHICLE IDENTIFICATION

Unit	Type	Make	Year	State	Plate #	Equipment ID	VIN	GVWR	CVSA #	CVSA Issued #	OOS Sticker
1	TT	PTRB	2007	KY	A02614	7	1XP5DB9X07D[REDACTED]	50,000			
2	ST	GDAN	2006	KY	637402	5555	1GRAA06266B[REDACTED]	68,000			

## BRAKE ADJUSTMENTS

Axle #	1	2	3	4	5
Right	1 3/8	1 5/8	1 1/4	1 1/4	1 1/2
Left	1 5/8	1 1/2	1 1/2	1 3/4	1 1/2
Chamber	C-24	C-30	C-30	C-30	C-30

## VIOLATIONS

Vio Code	Section	Unit	OOS	Citation #	Verify	Crash	Violations Discovered
395.8E	395.8(e)	D	Y		N	N	False log book for 06/25/2015. Showing Off Duty 6/15 thru 6/25 2015. Logged a trip to Haines City, FL. 6/25/2015 while actually making a return trip to Kentucky.
393.43A	393.43(a)	1	Y		U	N	No or improper tractor protection valve
396.17C	396.17(c)	1	N		N	N	Operating a CMV without proof of a periodic inspection. Altered Periodic Inspection. Date showing 8/29/2014. The 4 had been altered from a 2.
392.71A	392.71(a)	1	N		N	N	Using or equipping a CMV with radar detector. In possession. Not in use found in sleeper berth.
393.45B2	393.45(b)(2)	2	Y		U	N	Brake hose or tubing chafing and/or kinking. Worn thru cordage. Rt axle 4 supply air hose.
393.45B2	393.45(b)(2)	2	Y		U	N	Brake hose or tubing chafing and/or kinking. Worn thru outer ply. Rt axle 4 emergency air hose.

**HazMat:** No HM Transported.

**Placard:** No **Cargo Tank:**

**Special Checks:** Post Crash

Report Prepared By:  
KENNETH W. CLEPPER

Badge #:  
I05Z23

Copy Received By:  
BENJAMIN BREWER

Page 1 of 2



01083675 TN TNTBZT000568

X \_\_\_\_\_

X \_\_\_\_\_

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**Fax#:**

**State#:**

**Location:** DENTONS WRECKER SERVICE

**Highway:** BONNIE OAKS EXIT

**County:** HAMILTON, TN

**MilePost:**

**Origin:** HAINES CITY, FL

**Destination:** CHATTANOOGA, TN

**Shipper:**

**Bill of Lading:**

**Cargo:** EMPTY

**Driver:** BREWER, BENJAMIN S

**License#:** [REDACTED]

**State:** KY

**Date of Birth:** [REDACTED]

**CoDriver:**

**License#:**

**State:**

**Date of Birth:**

Pursuant to the authority contained in Title 49, CFR; Section 27 of the Transportation Rules/Regulations(TCA 65-15-113), I hereby declare BENJAMIN BREWER "OUT OF SERVICE", and shall not drive a commercial motor vehicle until Record of Duty Status Made Current.

Vehicle OUT OF SERVICE until all vehicle OOS items are repaired.

**CERTIFICATION of REPAIRMAN:**

I certify that the violations marked above have been satisfactorily repaired.

Failure to return this report with the required certification can result in penalties up to \$1,000 per day for each day the violation continues, up to a total of \$10,000.

Signature Of Repairer X: \_\_\_\_\_ Facility: \_\_\_\_\_ Date: \_\_\_\_\_

\*\*\* NOTE TO DRIVER: This report must be furnished to the motor carrier whose name is listed above.

CARRIER CERTIFICATION: The undersigned certifies that all driver and vehicle violations on this report have been corrected and are in compliance with the Motor Carrier Safety and HM Regulations insofar as they are applicable to motor carriers and drivers. This certification MUST BE SIGNED by the Motor Carrier and RETURNED WITHIN 15 Days to the address at the top of this form.

Signature Of Motor Carrier X: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

**Report Prepared By:**  
KENNETH W. CLEPPER

**Badge #:**  
105Z23

**Copy Received By:**  
BENJAMIN BREWER

Page 2 of 2

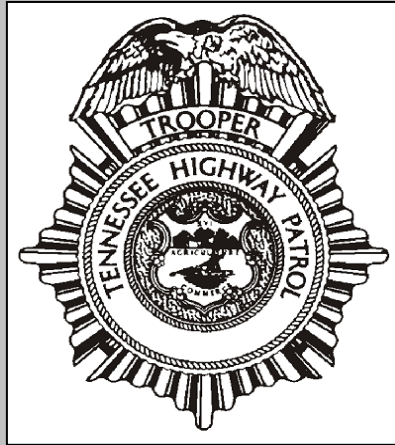


01083675 TN TNTBZT000568

X \_\_\_\_\_

X \_\_\_\_\_

# TENNESSEE HIGHWAY PATROL COMMERCIAL VEHICLE POST-CRASH INVESTIGATION REPORT



TENNESSEE HIGHWAY PATROL  
INCIDENT / EVENT TRACKING NUMBER

215023857

CRASH DATE AND LOCATION

6/25/2015-1809 I-75 NORTH 10MM

REPORT COMPLETED BY

TRP. WADE CLEPPER

DATE

0710/2015

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# POST-CRASH INSPECTION REPORT REVIEW

THP Incident / Event No.	215023857	Driver/Vehicle Examination Report No.	NONE
Investigating Officer	TRP. WADE CLEPPER		
Officer Assisting (If applicable)	TRP. CHUCK MELHORN / LT. JOHN HARMON		
District Office	CHATTANOOGA		
Date and Time Officer Notified	06/25/2015 - 1859		
Location	I-75 MM 11		
Date and Time Inspection Began	06/25/2015 - 2020		
Date Inspection Completed	7/10/2015		
Total Manhours		Overtime Hours	
Compliance Review Requested (Y/N)	Y	To Whom?	FMCSA
Photographs Taken (Y/N)	Y	By Whom?	CPD/THP
Number of Photographs Taken	UNKNOWN		
Person Receiving Photographs	UNKNOWN		
Date of Delivery	N/A	Time of Delivery	N/A

## REVIEWERS

### Reviewing Post-Crash Officer

Printed Name	Signature	Date
TRP.WADE CLEPPER		

### Immediate Supervisor

Printed Name	Signature	Date
SGT. ALAN BAILEY		

### Field Office Commander

Printed Name	Signature	Date

## POST-CRASH INSPECTION SUMMARY (Page 2a)

Location : Denton's Wrecker Service

Vehicle: 2007 Perterbilt

Operator: Cooling Runnings Express Inc.

Inspectors: Trp. Wade Clepper  
Trp. Charles Melhorn  
Lt. John Harmon

### Documents Obtained for Evidence

Drivers Record of Duty Status  
Insurance Document  
Shipping Papers  
Receipts generated by the Driver  
Various trip Documents  
GPS Report from Company Owner

### Driver of the Vehicle:

Benjamin Scott Brewer-

Mr. Brewer started working for Cool Runnings on June 22, 2015. Mr. Brewer was making his first trip for the Carrier. Mr. Brewer had a valid CDL issued from Kentucky and had an "N" endorsement. The driver license was issued on [REDACTED] and expires on [REDACTED].

## POST-CRASH INSPECTION SUMMARY (Page 2b)

### HOURS OF SERVICE

Mr. Brewer filled out a 7 Day prior recap of his "Hours of Service" date June 16,2015. Mr. Brewer also had a log sheet in his Log Book showing "Off Duty" 6/15/2015 thru 6/25/2015.

Also found was a loose leaf from his log book for 6/25/2015 and a second log sheet still in the log book for 6/25/2015 each having different times. There was also an entry in the log book for 6/26/2015.

The logs were reconstructed by the THP and the NTSB using documents found in the vehicle and GPS records supplied by the Carrier. Documents found: Fuel receipts,weigh scale receipts,shippers bill of ladings.

Mr. Brewer had appeared to be "On Duty and Driving combined" from 6/22/2015 thru 6/25/2015 found through examination of the documents that were reviewed. Consequently the Logs were found to be FALSE at the time of the crash.

Mr. Brewer was found to be "On Duty and Driving combined" approximatly 36 Hours without a legal break 6/23/2015 thru 6/24/2015.

Mr. Brewer appeared to be driving in Haines City, Florida at 0430 Hrs.(By GPS readings.) to unload on 6/25/2015. At 0744 the vehicle was then showing in motion returning to the 0430 Hrs. starting point in Haines City. At 0805 Hrs. Mr. Brewer left on his return trip to London, Kentucky. Mr. Brewer stopped in Jasper, Florida for food around 1210 Hrs. and continued driving until the crash in Chattanooga, Tennessee at 1909 hrs..

At the time of the crash Mr. Brewer may have had 14 Hours and 35 minutes "On Duty and Driving combined" putting him in Violation of his 14 Hour Rule. ( This is is still under Investigation at the time of this report.)

The Log sheets were signed by Mr. Brewer and the signatures appeared to be Mr. Brewers.



## POST-CRASH INSPECTION SUMMARY (Page 2c)

### VEHICLE INSPECTION:

LIGHTS: NO VIOLAIONS FOUND

### BRAKES:

Air was supplied from a outside source to the Primary air tank and brakes applied. The brakes on axle 2 and 3 were inspected at this time.

Air was supplied directly to each steering brake and inspected individually.

NO VIOLATIONS WERE FOUND. Each brake was in proper adjustment and worked accordingly.

The Tractor Protection Valve was Inoperative.

### Frame:

Front Cross Member was damaged due to the crash. No other violations found.

### STEERING:

Steering Gear Box was broken from the support bolts. Tie Rod was bent all due to the crash. No other violations found.

### SUSPENSION:

Front right spring Hanger broken and left rear spring shackle was broken on axle one. These violations were due to the crash. No other violations found.

### TIRES:

Right axle one tire flat due to the crash. No other violations found.

### Wheels:

Right axle one damaged due to crash. No other violations found.

### EXHAUST:

No violations noted.

### SEMI-TRAILER:

Make: Great Dane

Year: 2005

Owner: Cool Runnings Express Inc.

No Violations found on the lights, frame, body, wheels or brakes.

There was a flat on left axle four outside tire and the right axle five outside tire only had 30 PSI of air these violations were due to the crash.

There was also found a supply air line to right axle four brake chamber chaffing on the axle and had worn into the cordage. The emergency air to axle four brake chamber was also chaffing the axle showing moderate wear.

## POST-CRASH INSPECTION SUMMARY (Page 2d)

## POST-CRASH INSPECTION SUMMARY (Page 2e)



## LEAD AGENCY INFORMATION

Requesting Agency	CHATTANOOGA POLICE DEPARTMENT		
Address	3410 AMNICOLA HWY CHATTANOOGA, TN. 37419	Phone No.	423-698-2525
Investigating Trooper/Officer	OFC. JOE WARREN	Phone No.	
Requesting Agency Tracking #	15-062183	Photographs Taken?	YES

## OTHER OFFICIALS PRESENT

Official's Name and Title		Reason for Presence	
Agency		Phone No.	
Address			
Official's Name and Title		Reason for Presence	
Agency		Phone No.	
Address			
Official's Name and Title		Reason for Presence	
Agency		Phone No.	
Address			
Official's Name and Title		Reason for Presence	
Agency		Phone No.	
Address			
Official's Name and Title		Reason for Presence	
Agency		Phone No.	
Address			

## WITNESS INFORMATION

Name		License No./State	
Address			
Phone Number		Cell/Pager Number	
Employer/Occupation		Work Number	
Name		License No./State	
Address			
Phone Number		Cell/Pager Number	
Employer/Occupation		Work Number	
Name		License No./State	
Address			
Phone Number		Cell/Pager Number	
Employer/Occupation		Work Number	
Name		License No./State	
Address			
Phone Number		Cell/Pager Number	
Employer/Occupation		Work Number	
Name		License No./State	
Address			
Phone Number		Cell/Pager Number	
Employer/Occupation		Work Number	

## MOTOR CARRIER INFORMATION

Name of Motor Carrier	COOL RUNNINGS EXPRESS				
Street Address	[REDACTED]				
City	LONDON	State	KENTUCKY	Zip	407410
DOT No.	683675	ICC No.			
Phone Number		Fax Number			
Representative Contacted		Position/Title			
Type of Transportation Being Performed (ie Interstate For-Hire)					

## INSURANCE INFORMATION

Company	[REDACTED]				
Street Address	[REDACTED]				
City	[REDACTED]	State	OHIO	Zip	[REDACTED]
Representative on Scene					
Policy Number	[REDACTED]	Effective Date on Policy			

## INSPECTION SELECTION SYSTEM

Inspection Value		Total Number of Inspections	
Crash SEA		Vehicle SEA	
Driver SEA		Vehicle Out-of-Service Rate	
Driver Out-of-Service Rate		Hazardous Materials	
Yes		No	

## CARGO INFORMATION

Description	N/A		Manifest Number	
Shipper				
Address				
City/State/Zip Code		Phone Number		
Receiver				
Address				
City/State/Zip Code		Phone Number		
Weight by Manifest		Shipped Date		Delivery Date
Hazardous Materials		YES	NO	( If YES, see pages 15-16 )
Hazardous Materials Spilled?		YES	NO	
TEMA Notified?		YES	NO	
Clean-up Performed By				
Address/City/State/Zip Code				
Phone Number		Representative Name		

Additional Comments

**NO CARGO ON IN TRAILER**

**LOAD HAD BEEN DELIVERED IN HAINES CITY, FL.**

DRIVER INFORMATION						
DRIVER INFORMATION				CO-DRIVER INFORMATION		
Name	BENJAMIN SCOTT BREWER					
Address						
City/State/Zip Code	LONDON, KY 40744					
Home Phone	N/A					
DOB						
Driver License Number/State						
Class	DA					
Endorsements	N					
Restrictions/Complied with?	NONE					
Years Driving Experience	UNK					
Knowledge of Roadway	UNK					
Driver History	VAILD					
Previous Crashes	YES					

MEDICAL CERTIFICATE						
DRIVER INFORMATION				CO-DRIVER INFORMATION		
Date of Examination						
Date of Expiration						
Lenses	WEARING CORRECTIVE LENSES					
Hearing Aid	N/A					
Waiver	N/A					
Medic Alert	N/A					
Examining Doctor	LORI BAKER					
Clinic						
Clinic Address						
Seat Belt Type	LAP					

DRIVER'S HOURS OF SERVICE						
Date	Driving	On-Duty	TOTAL	Miles Driven	Hours Accumulated 60/70 Hour Rule	16 hrs-45 mins.
6-15/6-25				0	Hours Accumulates Since Last Legal Break	
25-Jun	4.25	1	5.25	200	Last Entry in Duty Status	6/26/2015 -0530
25-Jun	10	1	11	590	Driver in Violation of Hours of Service?	Y
26-Jun	0.5		0.5	0	CO-DRIVER	
28-Jun					Duty Status at Time of Crash	
					Last Entry in Duty Status	
					Hours Accumulated 60/70 Hour Rule	
					Hours of Service Violations Noted?	
Electronic Duty Status (Y/N)				Model	Serial Number	
Information Downloaded By				Unit Seized By		

PASSENGER INFORMATION						
Name	Charity Dawn Pennington			Race/Sex		DOB
Street Address				Phone Number	6063099674	
City/State/Zip Code	LONDON, KY 40744			Identification Number	Authorized?	NO
Name				Race/Sex	DOB	
Street Address				Phone Number		
City/State/Zip Code				Identification Number	Authorized?	
Name				Race/Sex	DOB	
Street Address				Phone Number		
City/State/Zip Code				Identification Number	Authorized?	





TRAILER									
Make	GREAT DANE			Model	REEFER		Year	2005	
VIN	1GRAA06266			Manufacture Date	2005				
Company Unit No.	5555			License Plate	637402		State	KY	
GVWR	68000			Registered Weight	N/A				
Color	WHITE			Hub Reading				No. of Axles	2
Last Annual Inspection	UNK			CVSA Decal					
Registrant	COOL RUNNINGS EXPRESS INC.								
Address									
City	LONDON			State	KY		Zip	40743	
Owner	SAME AS ABOVE								
Address									
City				State			Zip		
TRAILER # 2									
Make				Model			Year		
VIN				Manufacture Date					
Company Unit No.				License Plate			State		
GVWR				Registered Weight					
Color				Hub Reading				No. of Axles	
Last Annual Inspection				CVSA Decal					
Registrant									
Address									
City				State			Zip		
Owner									
Address									
City				State			Zip		
CONVERTER DOLLY									
Make				Model			Year		
VIN				Manufacture Date					
Company Unit No.				License Plate			State		
GVWR				Registered Weight					
Color				Hub Reading				No. of Axles	
Last Annual Inspection				CVSA Decal					
Registrant									
Address									
City				State			Zip		
Owner									
Address									
City				State			Zip		
COUPLING DEVICES									
Type	FIFTH WHEEL / KING PIN								
Secured to Vehicle	YES								
Safety Devices Intact	YES								
How Many	1								
COUPLING AND SECUREMENT OF CARGO									
Number of Tie Downs	N/A								
Type of Tie Downs	N/A								
Size of Tie Downs	N/A								
Load Cover	N/A								
Header Board	YES								
Trailer Suspension/Frame	OK								

## TIRE INFORMATION

	Driver Side				Passenger Side			
Axle 1								
Size		285/75R 24.5			285/75R 24.5			
Make		YOKAHOMA			YOKAHOMA			
Design		ROYRY 6177			ROYRY 6177			
Pressure		115			O			
Tread Depth		Max	Min		Max	Min		
		10/32			10/32			
Axle 2	Outside		Inside		Inside		Outside	
Size	275/80 R24.5		275/80 R24.5		275/80 R24.5		275/80 24.5	
Make	BF GOODRICH		BF GOODRICH		BF GOODRICH		BF GOODRICH	
Design	DR44		DR44		DR44		DR44	
Pressure	115		100		110		100	
Tread Depth	Max	Min	Max	Min	Max	Min	Max	Min
	21/32		22/32		20/32		20/32	
Axle 3	Outside		Inside		Inside		Outside	
Size	275/80 R24.5		275/80 R24.5		275/80 R24.5		275/80 R24.5	
Make	BF GOODRICH		BF GOODRICH		BF GOODRICH		BF GOODRICH	
Design	DR44		DR44		DR44		DR44	
Pressure	95		105		100		100	
Tread Depth	Max	Min	Max	Min	Max	Min	Max	Min
	20/32		20/32		22/32		20/32	
Axle 4	Outside		Inside		Inside		Outside	
Size	295/75R 22.5		295/75R 22.5		295/75R 22.5		295/75R 22.5	
Make	GENERAL		GENERAL		GENERAL		GENERAL	
Design	ST250		ST250		ST250		ST250	
Pressure	0		95		96		104	
Tread Depth	Max	Min	Max	Min	Max	Min	Max	Min
	9/32		9/32		9/32		9/32	
Axle 5	Outside		Inside		Inside		Outside	
Size	295/75R 22.5		295/75R 22.5		295/75R 22.5		295/75R 22.5	
Make	GENERAL		GENERAL		SUPER CARGO		SUPER CARGO	
Design	ST250		ST250		SC05		SC05	
Pressure	100		95		96		30	
Tread Depth	Max	Min	Max	Min	Max	Min	Max	Min
	11/32				7/32		8/32	

## TIRE INFORMATION

	Driver Side				Passenger Side			
<b>Axle 6</b>	<b>Outside</b>		<b>Inside</b>		<b>Inside</b>		<b>Outside</b>	
Size								
Make								
Design								
Pressure								
Tread Depth	Max	Min	Max	Min	Max	Min	Max	Min
<b>Axle 7</b>	<b>Outside</b>		<b>Inside</b>		<b>Inside</b>		<b>Outside</b>	
Size								
Make								
Design								
Pressure								
Tread Depth	Max	Min	Max	Min	Max	Min	Max	Min
<b>Axle 8</b>	<b>Outside</b>		<b>Inside</b>		<b>Inside</b>		<b>Outside</b>	
Size								
Make								
Design								
Pressure								
Tread Depth	Max	Min	Max	Min	Max	Min	Max	Min
<b>Axle 9</b>	<b>Outside</b>		<b>Inside</b>		<b>Inside</b>		<b>Outside</b>	
Size								
Make								
Design								
Pressure								
Tread Depth	Max	Min	Max	Min	Max	Min	Max	Min
<b>Axle 10</b>	<b>Outside</b>		<b>Inside</b>		<b>Inside</b>		<b>Outside</b>	
Size								
Make								
Design								
Pressure								
Tread Depth	Max	Min	Max	Min	Max	Min	Max	Min

## BRAKE SYSTEM

Who is responsible for brake adjustments	<b>COOL RUNNINGS EXPRESS</b>
--	------------------------------

When were the brakes last adjusted	<b>UNK</b>
------------------------------------	------------

**Notes**

## AIR BRAKE SYSTEM

Type	S-cam	Disc	Wedge
Air Loss on Brake Application	N/A		
Low/Air Vacuum Warning Device	OK		
Engine Brake	UNK		
Tractor Protection Valve	INOP		
Auto Trailer Brake Application	OK		
Air Tank Securement	OK		
Air Lines	OK		
Glad Hands	OK		

**Notes**

**SUPPLY AIR LINE TO RT AXLE 4 WORN INTO CORDS. EMERGENCY AIR SAME AXLE WORN THROUGH OUTER PLY. NEITHER WERE LEAKING.**

## HYDRAULIC BRAKE SYSTEM

**Type**

Hy Power		Dual Power	
Hydro Max		Air Hydraulic Intensifier	
Master Cylinder Fluid Level			

**Fluid Leaks**

Master Cylinder		Wheel Cylinder	
Brake Lines		Brake Indicator Lamps	

**Notes**

## AIR BRAKE SYSTEM MEASUREMENTS

**A** = Distance from face of chamber to center of clevis pin @ full brake application

**B** = Slack Adjuster Length

**C** = Distance from center of push rod (at the face of the chamber) to the center of the cam shaft)

Enter fractions as a whole number, space, fraction

Axle 1	Left	Right	Slacks	Left	Right
Drum Diameter	15.5	16	Auto/Manual	AUTO	AUTO
Applied	3.88	3.88	<b>A</b>	3.75	3.88
Released	2.20	2.50	<b>B</b>	5.50	5.50
Travel	1.63	1.38	<b>C</b>	5.88	5.88
Size	24	24	<b>Angle</b>		
Rolling Radius	19	19			

Axle 2	Left	Right	Slacks	Left	Right
Drum Diameter	16	16	Auto/Manual	AUTO	AUTO
Applied	4.50	4.63	<b>A</b>	4.50	4.63
Released	3.00	3.00	<b>B</b>	5.50	5.50
Travel	1.50	1.63	<b>C</b>	6.88	6.88
Size	30	30	<b>Angle</b>		
Rolling Radius	21	21			

Axle 3	Left	Right	Slacks	Left	Right
Drum Diameter	16	16	Auto/Manual	AUTO	AUTO
Applied	4.63	4.25	<b>A</b>	4.63	4.25
Released	3.13	3.00	<b>B</b>	5.50	5.50
Travel	1.50	1.25	<b>C</b>	6.88	6.88
Size	30		<b>Angle</b>		
Rolling Radius	21				

Axle 4	Left	Right	Slacks	Left	Right
Drum Diameter	16	16	Auto/Manual	AUTO	AUTO
Applied	13.13	12.38	<b>A</b>	13.13	12.13
Released	12.13	11.13	<b>B</b>	5.50	5.50
Travel	1.00	1.25	<b>C</b>	13.00	13.00
Size	30	30	<b>Angle</b>		
Rolling Radius	20	20			

Axle 5	Left	Right	Slacks	Left	Right
Drum Diameter	16	16	Auto/Manual	AUTO	AUTO
Applied	12.50	13.00	<b>A</b>	12.50	13.00
Released	11.13	11.75	<b>B</b>	6.50	6.50
Travel	1.38	1.25	<b>C</b>	14.38	14.38
Size	30	30	<b>Angle</b>		
Rolling Radius	20	20			

## AIR BRAKE SYSTEM MEASUREMENTS

- A** = Distance from face of chamber to center of clevis pin @ full brake application
- B** = Slack Adjuster Length
- C** = Distance from center of push rod (at the face of the chamber) to the center of the cam shaft)

Enter fractions as a whole number, space, fraction

Axle 6	Left	Right	Slacks	Left	Right
Drum Diameter			Auto/Manual		
Applied			A		
Released			B		
Travel	0.00	0.00	C		
Size			Angle		
Rolling Radius					

Axle 7	Left	Right	Slacks	Left	Right
Drum Diameter			Auto/Manual		
Applied			A		
Released			B		
Travel	0.00	0.00	C		
Size			Angle		
Rolling Radius					

Axle 8	Left	Right	Slacks	Left	Right
Drum Diameter			Auto/Manual		
Applied			A		
Released			B		
Travel	0.00	0.00	C		
Size			Angle		
Rolling Radius					

Axle 9	Left	Right	Slacks	Left	Right
Drum Diameter			Auto/Manual		
Applied			A		
Released			B		
Travel	0.00	0.00	C		
Size			Angle		
Rolling Radius					

Axle 10	Left	Right	Slacks	Left	Right
Drum Diameter			Auto/Manual		
Applied			A		
Released			B		
Travel	0.00	0.00	C		
Size			Angle		
Rolling Radius					

# ANGLE WORKSHEET

$$\text{Cosine of Angle} = C^2 - A^2 - B^2 \div -2AB$$

Axle 1	Left			
	A =	3.75	A <sup>2</sup> =	14.0625
	B =	5.50	B <sup>2</sup> =	30.25
	C =	5.88	C <sup>2</sup> =	34.5744
C <sup>2</sup> - A <sup>2</sup> - B <sup>2</sup> =				-9.7381
~ -2AB =				-41.25
Cos of the Angle =				0.236075152
Inverse Angle =				1.332471482
Angle =				76.34499226

Axle 1	Right			
	A =	3.88	A <sup>2</sup> =	15.0544
	B =	5.50	B <sup>2</sup> =	30.25
	C =	5.88	C <sup>2</sup> =	34.5744
C <sup>2</sup> - A <sup>2</sup> - B <sup>2</sup> =				-10.73
~ -2AB =				-42.68
Cos of the Angle =				0.251405811
Inverse Angle =				1.316663884
Angle =				75.43928358

Axle 2	Left			
	A =	4.50	A <sup>2</sup> =	20.25
	B =	5.50	B <sup>2</sup> =	30.25
	C =	6.88	C <sup>2</sup> =	47.3344
C <sup>2</sup> - A <sup>2</sup> - B <sup>2</sup> =				-3.1656
~ -2AB =				-49.5
Cos of the Angle =				0.063951515
Inverse Angle =				1.50680114
Angle =				86.33334587

Axle 2	Right			
	A =	4.63	A <sup>2</sup> =	21.4369
	B =	5.50	B <sup>2</sup> =	30.25
	C =	6.88	C <sup>2</sup> =	47.3344
C <sup>2</sup> - A <sup>2</sup> - B <sup>2</sup> =				-4.3525
~ -2AB =				-50.93
Cos of the Angle =				0.085460436
Inverse Angle =				1.485231521
Angle =				85.09749775

Axle 3	Left			
	A =	4.63	A <sup>2</sup> =	21.4369
	B =	5.50	B <sup>2</sup> =	30.25
	C =	6.88	C <sup>2</sup> =	47.3344
C <sup>2</sup> - A <sup>2</sup> - B <sup>2</sup> =				-4.3525
~ -2AB =				-50.93
Cos of the Angle =				0.085460436
Inverse Angle =				1.485231521
Angle =				85.09749775

Axle 3	Right			
	A =	4.63	A <sup>2</sup> =	21.4369
	B =	5.50	B <sup>2</sup> =	30.25
	C =	6.88	C <sup>2</sup> =	47.3344
C <sup>2</sup> - A <sup>2</sup> - B <sup>2</sup> =				-4.3525
~ -2AB =				-50.93
Cos of the Angle =				0.085460436
Inverse Angle =				1.485231521
Angle =				85.09749775

Axle 4	Left			
	A =	13.13	A <sup>2</sup> =	172.3969
	B =	5.50	B <sup>2</sup> =	30.25
	C =	13.00	C <sup>2</sup> =	169
C <sup>2</sup> - A <sup>2</sup> - B <sup>2</sup> =				-33.6469
~ -2AB =				-144.43
Cos of the Angle =				0.232963373
Inverse Angle =				1.335672535
Angle =				76.52839905

Axle 4	Right			
	A =	12.13	A <sup>2</sup> =	147.1369
	B =	5.50	B <sup>2</sup> =	30.25
	C =	13.00	C <sup>2</sup> =	169
C <sup>2</sup> - A <sup>2</sup> - B <sup>2</sup> =				-8.3869
~ -2AB =				-133.43
Cos of the Angle =				0.062856179
Inverse Angle =				1.507898684
Angle =				86.39623053

Axle 5	Left			
	A =	12.50	A <sup>2</sup> =	156.25
	B =	6.50	B <sup>2</sup> =	42.25
	C =	14.38	C <sup>2</sup> =	206.7844
C <sup>2</sup> - A <sup>2</sup> - B <sup>2</sup> =				8.2844
~ -2AB =				-162.5
Cos of the Angle =				-0.050980923
Inverse Angle =				1.621799359
Angle =				92.92225851

Axle 5	Right			
	A =	13.00	A <sup>2</sup> =	169
	B =	6.50	B <sup>2</sup> =	42.25
	C =	14.30	C <sup>2</sup> =	204.49
C <sup>2</sup> - A <sup>2</sup> - B <sup>2</sup> =				-6.76
~ -2AB =				-169
Cos of the Angle =				0.04
Inverse Angle =				1.530785652
Angle =				87.70755722

# ANGLE WORKSHEET (2)

$$\text{Cosine of Angle} = C^2 - A^2 - B^2 \div -2AB$$

Axle 6	Left			
	A =		$A^2 =$	0
	B =		$B^2 =$	0
	C =		$C^2 =$	0
$C^2 - A^2 - B^2 =$				0
$\sim -2AB =$				0
Cos of the Angle =				#DIV/0!
Inverse Angle =				#DIV/0!
Angle =				#DIV/0!

Axle 6	Right			
	A =		$A^2 =$	0
	B =		$B^2 =$	0
	C =		$C^2 =$	0
$C^2 - A^2 - B^2 =$				0
$\sim -2AB =$				0
Cos of the Angle =				#DIV/0!
Inverse Angle =				#DIV/0!
Angle =				#DIV/0!

Axle 7	Left			
	A =		$A^2 =$	0
	B =		$B^2 =$	0
	C =		$C^2 =$	0
$C^2 - A^2 - B^2 =$				0
$\sim -2AB =$				0
Cos of the Angle =				#DIV/0!
Inverse Angle =				#DIV/0!
Angle =				#DIV/0!

Axle 7	Right			
	A =		$A^2 =$	0
	B =		$B^2 =$	0
	C =		$C^2 =$	0
$C^2 - A^2 - B^2 =$				0
$\sim -2AB =$				0
Cos of the Angle =				#DIV/0!
Inverse Angle =				#DIV/0!
Angle =				#DIV/0!

Axle 8	Left			
	A =		$A^2 =$	0
	B =		$B^2 =$	0
	C =		$C^2 =$	0
$C^2 - A^2 - B^2 =$				0
$\sim -2AB =$				0
Cos of the Angle =				#DIV/0!
Inverse Angle =				#DIV/0!
Angle =				#DIV/0!

Axle 8	Right			
	A =		$A^2 =$	0
	B =		$B^2 =$	0
	C =		$C^2 =$	0
$C^2 - A^2 - B^2 =$				0
$\sim -2AB =$				0
Cos of the Angle =				#DIV/0!
Inverse Angle =				#DIV/0!
Angle =				#DIV/0!

Axle 9	Left			
	A =		$A^2 =$	0
	B =		$B^2 =$	0
	C =		$C^2 =$	0
$C^2 - A^2 - B^2 =$				0
$\sim -2AB =$				0
Cos of the Angle =				#DIV/0!
Inverse Angle =				#DIV/0!
Angle =				#DIV/0!

Axle 9	Right			
	A =		$A^2 =$	0
	B =		$B^2 =$	0
	C =		$C^2 =$	0
$C^2 - A^2 - B^2 =$				0
$\sim -2AB =$				0
Cos of the Angle =				#DIV/0!
Inverse Angle =				#DIV/0!
Angle =				#DIV/0!

Axle 10	Left			
	A =		$A^2 =$	0
	B =		$B^2 =$	0
	C =		$C^2 =$	0
$C^2 - A^2 - B^2 =$				0
$\sim -2AB =$				0
Cos of the Angle =				#DIV/0!
Inverse Angle =				#DIV/0!
Angle =				#DIV/0!

Axle 10	Right			
	A =		$A^2 =$	0
	B =		$B^2 =$	0
	C =		$C^2 =$	0
$C^2 - A^2 - B^2 =$				0
$\sim -2AB =$				0
Cos of the Angle =				#DIV/0!
Inverse Angle =				#DIV/0!
Angle =				#DIV/0!



## HAZARDOUS MATERIALS INFORMATION SHEET

Shipping Paper No.

Shipper's Name

Address

### Hazardous Materials as Listed On Shipping Paper (Full Description of Each Product)

Proper Shipping Name	Hazard Class	ID Number	Packing Group	Quantity

Name of Party Signing Shippers Certification

### NON-BULK PACKAGES

#### Package Failure

Type of Package	Failed Y/N	Describe Package Failure

### MARKING INFORMATION/CHARACTERISTICS

Product Name	Primary Hazard Class	Secondary Hazrd	Hazardous Waste	Hazardous Substance	Violations

### LABELING/PLACARDING INFORMATION

Product Name	Label(s) Required	Placard(s) Required	Violations

### NOTES

CARGO TANK/BULK PACKAGE									
CERTIFICATION PLATE INFORMATION									
Tank Manufacturer									
Serial No.				Head Material					
Tank Specification				Shell Material					
Date of Manufacture				Weld Materials					
Design Pressure / MA WP				Max Design Density					
Number of Compartments				Max Product Load					
Tank Capacity (per comp)				1)		2)		3)	
				4)		5)		6)	
300/400/500 SERIES TANKS									
Shell Thickness				Shell Min Thickness					
Head Mfg Thickness				Head Min Thickness					
TEST DATE MARKING									
Month	Year			Type of Test					
				"V"		External Visual			
				"I"		Internal Visual			
				"K"		Leakage Test			
				"P"		Pressure Test			
				"T"		Thickness Test			
				"L"		Lining Test			
ACCIDENT DAMAGE PROTECTION									
	Failed to Protect			Damaged (but did not fail to protect)			Not Damaged		
Overturn Protection									
Rear-End Protection									
Bottom Damage Protection									
CARGO TANK DAMAGE									
Location of Leakage									
None									
Front Head			Rear Head			Valve Top			
Front Head Weld			Rear Head Weld			Valve Bottom			
Shell Left Front			Shell Right Front			Vent Top			
Shell Left Rear			Shell Right Rear			Manhole Assembly			
Shell Weld			Bulkhead Weld			Piping			
Baffle Weld			Attachment Weld			Suspension Assembly			
5th Wheel Connection			Other			Other			
CHARACTERISTICS									
Type of Circumferential Reinforcement									
Bulk Head				Baffle					
Ring Stiffners				N/A					
% or Volume Loaded per Compartment					Tank Dimensions				
Comp 1			Comp 5			Height			
Comp 2			Comp 6			Width			
Comp 3			Comp 7			Length			
Comp 4			Comp 8			Distance from center bottom of tank to road surface			

ATTACHMENT LIST	
1	DRIVER/VEHICLE EXAMINATION REPORT (DVER)
2	
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