



2135 West Maple Road
Troy, MI 48064-7186

arvinmeritorinc.com

June 6, 2002

National Highway Traffic Safety Administration
Office of Defects Investigation, Room 5319
400 Seventh Street S.W.
Washington, D.C. 20590
Attention: Associate Administrator of Enforcement

Re: Campaign Notifications To Purchasers in accordance with 49 CFR 573.5

Second Amendment Campaign of certain Model 20-EDL Tie Rod End
Sockets Manufactured by TRW and Incorporated into ArvinMeritor Axles
NHTSA File No.: 02E-017.002

Ladies & Gentlemen:

Enclosed are representative copies of the Notification Letters that ArvinMeritor sent to Line Haul or Specialty OEM purchasers of the affected TRW Tie Rod Ends.

Notification Letters were mailed on May 24 & 25, 2002 to all Line Haul purchasers listed in the attached Mailing List "A", except International Truck. We are in the process of determining if International Truck has already recalled all suspect axles shipped to them in their previous recall on July 25, 2001. Also, Notification Letters were mailed on May 30, 2002 to all Specialty purchasers listed in the attached Mailing List "B".

Respectfully Submitted,

Marlene Vorhees
ArvinMeritor
Director, Quality

OFFICE OF DEFECTS
INVESTIGATION

2002 JUN 21 A 10:48

RECEIVED

Mailing List "A"
(Ref. NHTSA File No.: 02E-017.002)

**OEM Manufacturers of "Line Haul Vehicles" who Purchased
TRW Model 20-EDL Tie Rod Ends As Part of Axle Assemblies from
ArvinMeritor's Arden*, NC Plant between October 31, 1999 through May 31,
2000 and June 12, 2000 and August 31, 2000**

<u>OEM</u>	<u>Suspect Axles</u>
Freightliner LLC Attn: Timothy Blubaugh 4747 N. Channel Avenue Portland, Oregon 97208-7699 Phone: 503-745-5219	80,196
Kenworth Truck Company (PACCAR) Attn: Rick Sedgley 10630 N.E. 38 th Place Kirkland, Washington 98033 Phone: 425-828-5201	1718
International Truck and Engine Corp. Attn: Rick L. Van Laar 3033 Wayne Trace Ft. Wayne, Indiana 46801 Phone: 219-461-1890	11750
Mack Trucks, Inc. Attn: William J. Smith 2100 Mack Blvd. Allentown, Pennsylvania 18103-5622 Phone: 610-709-2198	2054
Peterbilt Motors Company (PACCAR) Attn: Paul Allen 3200 Airport Road Denton, Texas 76202-0550 Phone: 940-566-7770	2177
Volvo Trucks North America, Inc. Attn: Charles D. Powell 7900 National Service Rd. (27409) Greensboro, North Carolina 27402-6115 Phone: 336-393-2233	14932
Total Axles:	<hr/> 112,827

Note: OEM recall numbers may be less than the numbers reported above due to Amendment 2 Tie Rod Ends getting replaced during the previous recall.



2135 West Maple Road
Troy, MI 48084-7186

arvinmeritorinc.com

May 23, 2002

[FIRST AND LAST NAME]
[TITLE]
[COMPANY NAME]
[ADDRESS]
[CITY], [STATE] [ZIP CODE]

NOTICE: Second Amendment Campaign of certain Model 20-EDL Tie Rod End
Sockets Manufactured by TRW and Incorporated into ArvinMeritor Axles

ArvinMeritor File: C2AE

NHTSA File: 02E-017.002

Dear ArvinMeritor Customer:

This notice is sent to you in accordance with the requirements of the National Traffic
and Motor Vehicle Safety Act.

ArvinMeritor (formerly Meritor Automotive) has determined that a defect which relates
to motor vehicle safety exists in certain Model 20-EDL Ball Sockets that TRW manufactured
and shipped to ArvinMeritor from October 31, 1999 through May 12, 2000, and from June
12, 2000 through August 8, 2000; and that ArvinMeritor incorporated into axles it
manufactured from October 31, 1999 through May 31, 2000 and from June 12, 2000
through August 31, 2000.

Description of Defect

Based on our own engineering investigation, ArvinMeritor has concluded that the
TRW Model 20-EDL Ball-Socket Assemblies have a less robust bearing design, which leads
to higher wear rates and more rapid wear-out than previous TRW designs. Specifically, the
material specifications for the 20-EDL Ball-Socket Assemblies render the bearings in those
assemblies more vulnerable to manufacturing variations that can result in inadequate case
depth and hardness. A ball socket with inadequate case depth and hardness may
prematurely wear-out, which, in turn, may lead to a separation of the tie rod. For additional
information, see the enclosed copy of ArvinMeritor's Defect Information Report to NHTSA.

Recommended Action

ArvinMeritor recommends that owners of vehicles originally equipped with
ArvinMeritor axle assemblies containing TRW Model 20-EDL Ball Sockets replace such
sockets with appropriate size TRW DL ball-socket assemblies. Affected vehicles should be

repaired as soon as feasible by a vehicle manufacturer's authorized repair facility. This replacement program will be managed by ArvinMeritor, and will be at no expense to vehicle owners.

Identification of Affected Parts

Attached is a shipment report listing the ArvinMeritor axle assemblies that are suspected to contain TRW Model 20-EDL Ball Sockets that ArvinMeritor shipped to your facility. ArvinMeritor is continuing to research shipment records that pertain to aftermarket shipments. You may receive a separate notice if your company purchased aftermarket tie rod ends or x-tubes from ArvinMeritor.

The manufacturing date codes on the suspect TRW Model 20-EDL Ball-Socket Assemblies are limited to the following date codes:

TRW Date Codes	
9L1, 9L2, 9L3, 9L4, 9L5	0D1, 0D2, 0D3, 0D4
9M1, 9M2, 9M3, 9M4	0E1, 0E2
0A1, 0A2, 0A3, 0A4, 0A5	0F2, 0F3, 0F4
0B1, 0B2, 0B3, 0B4	0G1, 0G2, 0G3, 0G4
0C1, 0C2, 0C3, 0C4	

The manufacturing date code is stamped either on the ball socket cap, opposite the ball stud opening, or on the bar or tube of the tie rod assembly. Date codes not listed in this table are not included in this campaign, but may be a part of a previous TRW Model 20-EDL campaign (see NHTSA file numbers 00E-047.005 and 00E-047.009).

Availability of Replacement Parts and Service Instructions

Replacement parts and service instructions will be available as of June 21, 2002.

Vehicle manufacturers may obtain replacement DL ball-sockets directly from TRW. TRW DL ball-socket assemblies can be obtained as individual TRW DL ball-socket assemblies, or as service kits. The service kits for tie-rods will contain two TRW DL ball-socket assemblies and a service bulletin. The service instruction to be used for this campaign is ArvinMeritor Technical Publication (TP-0284, Replacing TRW Model 20-EDL (20-Size) Tie Rod Assembly Socket Ends on Meritor Axles).

Replacement parts can be ordered directly from TRW through the OEMs normal order entry process. TRW will ship kits and replacement parts direct to the location the vehicle manufacturer specifies.

For other questions concerning the campaign, you can contact ArvinMeritor's Customer Service Center at 1-800-535-5560 (US and Canada) between 8:00 a.m. and 6:00 p.m. EDT.

Labor and Handling Allowance

The same labor and handling allowance that were established for the original TRW Model 20-EDL campaign will continue to be used. Dealers should follow their standard warranty claim processing procedures to obtain reimbursement of expenses associated with installing service kits and replacement parts.

Removed Material Disposition

ArvinMeritor requires the dealers or fleets to grind the stem threads of the replaced parts to the point where the ball-socket assembly can no longer be used. The removed tie-rod ends should then be scrapped unless the replaced part is requested through the normal warranty channels. The dealer or fleet should complete the instructions included with the service kit and then file a warranty claim. ArvinMeritor will accept warranty claims directly from the vehicle manufacturers.

Claims for Credit

ArvinMeritor will pay valid claims for the replacement of suspect parts. Warranty claims for installing the replacement parts associated with this notice should contain the following information:

- Reference to ArvinMeritor's Campaign Number C2AE.
- Reference to the vehicle manufacturers campaign number.
- 17-digit vehicle identification number (VIN).
- Axle Serial Number.
- Axle weight rating (FAWR).
- Vehicle owner's name, address, and telephone number.
- Vehicle in-service date.
- Vehicle repair date.
- Vehicle mileage at the time of repair.
- Dealer work order number.
- Repairing facility name, address, and telephone number.
- Total labor hours required performing the work.
- Repair facilities hourly rate.
- Repair parts and quantities used for the repair.
- TRW date code of removed parts.

Failure to provide complete information may delay processing of the warranty claim.

Communication

If you conclude that ArvinMeritor has not enabled you to remedy this condition in a reasonable time, you may submit a complaint to the:

Administrator
National Highway Traffic Safety Administration
400 Seventh Street, S.W.
Washington, D.C. 20590

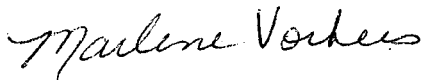
- or -

Call the toll free Auto Safety Hotline: 1-888-DASH-2-DOT or 1-888-327-4236

We regret any inconvenience that this situation may cause. ArvinMeritor wants to assure you that we are concerned for customer safety and your continued satisfaction with our products.

Sincerely,

ArvinMeritor



Marlene Vorhees
Director, Quality

Attachments: Shipment Report
ArvinMeritor TP-0284
Defect Information Report to NHTSA

cc: NHTSA
TRW (R. Sichau)



MERITOR.

Technical Bulletin

Replacing TRW 20-EDL (20-Size) Tie Rod Assembly Socket Ends on Meritor Axles

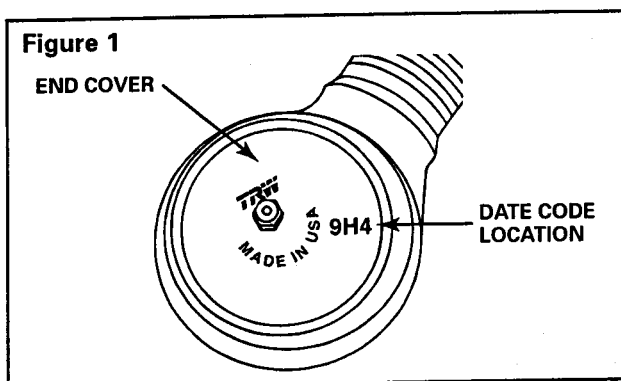
This technical bulletin provides instructions to replace TRW's 20-EDL (20-size) tie rod assembly socket ends on Meritor axles. Use the following procedures to determine if you should replace the socket ends.

Determine That In-Service Sockets are TRW 20-EDL (20-Size)

NOTE: Only 20-size sockets are subject to this campaign. Be sure you are servicing the correct size socket.

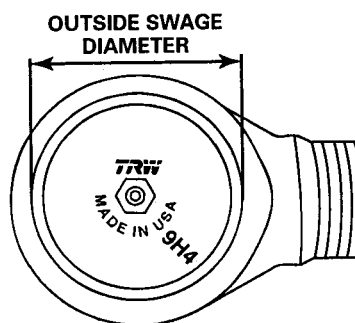
NOTE: A socket with "DL" stamped into the end cover is a different design and is not part of this campaign. Be sure you are servicing the correct socket type.

1. Check the date code on the socket end.
Figure 1. A truck chassis number will be identified on the original equipment (OE) manufacturer's list, along with the tie rod end date codes that are affected by this campaign. **A chassis number and date code combination that is not on the list is not part of this campaign.**



2. The sockets are 20-size sockets. To identify the size, measure the outside swage diameter. **Figure 2.** The outside swage diameter of a 20-EDL (20-size) socket measures approximately 1-7/8-inch. **A socket that measures 2-1/8-inch is a "24-size" socket and is not part of this campaign.**

Figure 2



3. If the conditions in Steps 1 and 2 are met: Use this kit to replace both tie rod ends. Proceed to Remove and Install the Tie Rod Ends in this bulletin for instructions.
4. If the conditions in Steps 1 and 2 are **not** met: The sockets are **not** part of this campaign.

Remove the Tie Rod Ends and Cross Tube

WARNING

To prevent serious eye injury, always wear safe eye protection when you perform vehicle maintenance or service.

Park the vehicle on a level surface. Block the wheels to prevent the vehicle from moving. Support the vehicle with safety stands. Do not work under a vehicle supported only by jacks. Jacks can slip and fall over. Serious personal injury and damage to components can result.

Support the tie rod assembly during maintenance and service to prevent serious personal injury and damage to components.

Use a brass or leather mallet for assembly and disassembly procedures. Do not hit steel parts with a steel hammer. Pieces of a part can break off and cause serious personal injury and damage to components.

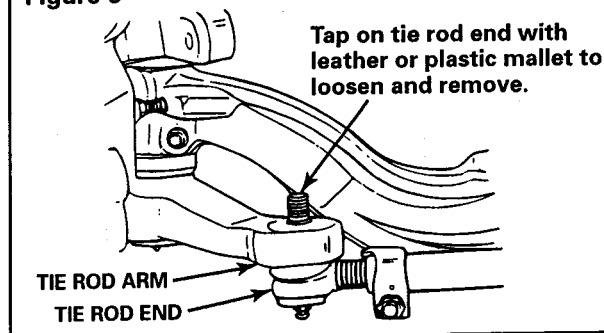
1. Park the vehicle on a level surface. Block the wheels to prevent the vehicle from moving. Set the parking brake.
2. Remove the cotter pins and nuts on both sides of the axle that fasten each tie rod end to the tie rod arms.

WARNING

Do not heat the arm to remove the tie rod assembly. Heating the tie rod arm will soften parts. Damage to components will result.

3. Use a tie rod puller or a ball-joint separator to disconnect the cross tube assembly from the tie rod arms. Do not heat the arm to remove the tie rod assembly. If necessary, tap the tie rod end with a leather or plastic mallet to loosen the tie rod end. Do not use a steel hammer. **Figure 3.**

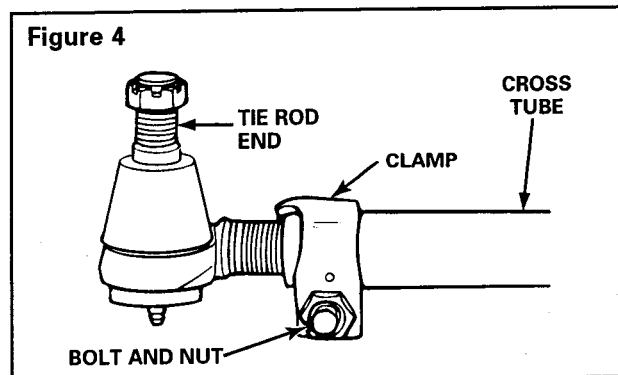
Figure 3



Remove and Install the Tie Rod Ends

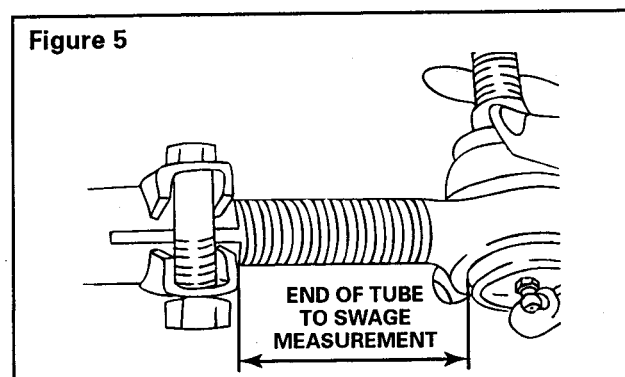
1. Note the position of the bolt and nut in the clamp, and the position of the clamp relative to the ground. **Figure 4.**

Figure 4



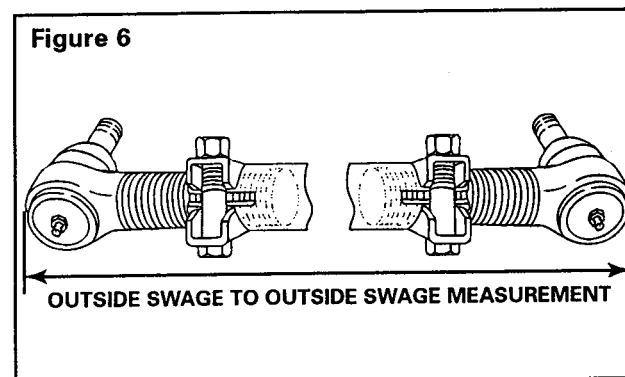
2. On one end, measure from the end of the cross tube to the nearest outside swage diameter. **Figure 5.** Record the measurement.

Figure 5



3. Measure the length of the tie rod from the outside of the swage diameter on one socket end to the outside of the swage diameter on the outer socket end. **Figure 6.** Record the measurement.

Figure 6

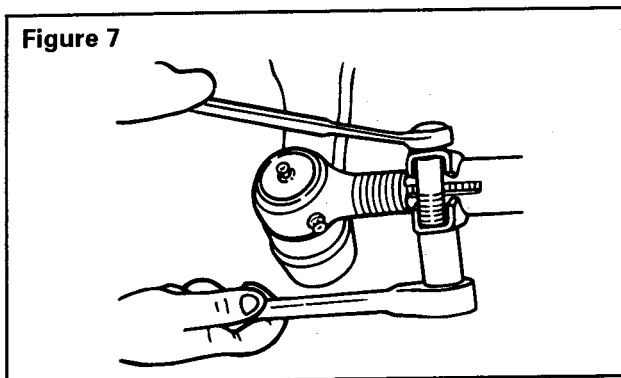


⚠ WARNING

If the cross tube clamps are tack-welded, do not remove the tack weld during tie rod end assembly removal and installation procedures. If you remove tack weld, clamp force is reduced. Loss of steering control, serious personal injury and damage to components can result. Replace the cross tube if weld is broken.

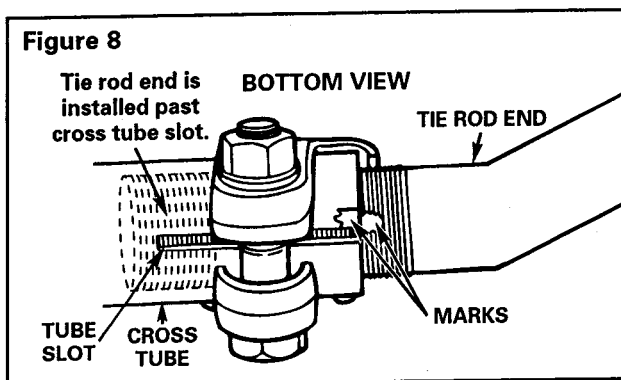
- Loosen the clamp on the cross tube. Figure 7. Remove one threaded tie rod end from the tube.

Figure 7



- Thread the new socket end into the cross tube until the measurement from the end of the tube to the nearest outside swage diameter is the same as Step 2. Repeat Steps 4 and 5 for the other socket end.
- Verify that both socket ends are threaded into the cross tube deeper than the cross tube slot. Figure 8.

Figure 8



- Measure the length of the tie rod again. Verify that it's the same length that you measured in Step 3. Sight the tie rod ends to verify that the socket ends are aligned.

- Verify that the tab on the cross tube clamp is firmly seated against the end of the cross tube. Install the nuts and bolts into the clamps and tighten them to specification. Refer to the Torque Specifications table.

- If the tab on the clamp is tack-welded: Do not remove the tack weld, which can reduce clamping force.

Install the Tie Rod Ends and Cross Tube onto the Axle

- Clean and dry the tie rod end taper and tie rod arm taper hole. Install the tie rod end into the knuckle tie rod arm.
- Install both tie rod end nuts to secure the tie rod end and cross tube assembly linkage to the tie rod arm. Tighten the nuts to specification. Refer to the Torque Specifications table.
- Install the cotter pins. If necessary, tighten the lock nut until the holes are aligned. Do not loosen the nut to install the cotter pin.
- Sight the tie rod ends to verify that the socket ends are aligned. Verify that the clamps are positioned correctly relative to the ground as noted earlier.
- Check vehicle toe-in measurements. Refer to Maintenance Manual 2, Front Non-Drive Steering Axles, for procedures to adjust toe-in, if necessary. Call ArvinMeritor's Customer Service Center at 800-535-5560 to order this publication.

Torque Specifications

Description	Size	Torque Range ⓘ	
		lb-ft	N·m
Tie rod arm to tie rod end castellated nut	7/8"-14	160-300	217-406
	1"-14	250-450	339-610
	1-1/8"-12	350-650	475-881
	1-1/4"-12	500-675	678-915
Cross tube clamp nut	5/8"-11	40-60	55-81
	3/4"-10	155-175	211-237

ArvinMeritor™
Commercial Vehicle Systems

Meritor Heavy Vehicle Systems, LLC
2135 West Maple Road
Troy, MI 48064 USA
800-535-5560
arvinmeritor.com



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Printed in the USA

TP-0284
Issued 05-02
16579/Meritor

April 2, 2002

National Highway Traffic Safety Administration
400 Seventh Street S.W.
Washington, D.C. 20590
Attention: Associate Administrator of Enforcement

Fax: 202-366-7882

Re: Second Amendment to September 2000, Defect Information Report, as amended on June 27, 2001, filed in accordance with 49 CFR §573.5, regarding certain Model 20-EDL Ball Sockets Manufactured by TRW and Sold to ArvinMeritor.

ArvinMeritor File: None

NHTSA File: 00E-047 (TRW)

Ladies & Gentlemen:

ArvinMeritor, Inc. submits this second amendment to its September 2000, Defect Information Report, as amended on June 27, 2001, in accordance with the requirements of The National Motor Vehicle Safety Act of 1966 as set forth in 49 CFR §573.5. The information is presented to correspond to the sub paragraphs of section §573.5(c).

Information Requested under §573.5(c)(1)

No change.

Information Requested under §573.5(c)(2)

This reports covers TRW Model 20-EDL Ball Socket Assemblies that were not otherwise covered by ArvinMeritor's initial Defect Information Report and the first amendment thereto. Specifically, the items of motor vehicle equipment affected by this amendment are Model 20-EDL Ball Socket Assemblies that TRW Commercial Steering Systems, a division of TRW, Inc. ("TRW") manufactured and shipped to ArvinMeritor from October 31, 1999 through May 12, 2000, and from June 12, 2000 through August 8, 2000; and that ArvinMeritor incorporated into axles it manufactured from October 31, 1999 through May 31, 2000 and from June 12, 2000 through August 31, 2000.

These dates are based on an analysis of TRW's and ArvinMeritor's manufacturing records, and are incremental to the dates identified in ArvinMeritor's initial Defect Information Report and the first amendment thereto.

Information Requested under §573.5(c)(3)

ArvinMeritor estimates that it incorporated into its axle assemblies approximately 119,000 Model 20-EDL Ball Socket Assemblies that TRW manufactured and shipped to ArvinMeritor from October 31, 1999 through May 12, 2000 and from June 12, 2000 through August 8, 2000. In addition, ArvinMeritor estimates that it incorporated into aftermarket products an additional 62,000 Model 20-EDL Ball Socket Assemblies that TRW manufactured and shipped to ArvinMeritor during those periods.

Information Requested under §573.5(c)(4)

The percentage of TRW Model 20-EDL Ball Socket Assemblies referenced above that are estimated to contain the condition described below is 100%.

Information Requested under §§573.5(c)(5)

TRW Model 20-EDL Ball Socket Assemblies are primarily comprised of a ball stud, a socket, and a "floating" bearing that is free to move relative to both the inside of the socket and the ball stud.

In August 2000, TRW filed a Defect Information Report with NHTSA indicating that it was recalling Model 20-EDL Ball-Socket Assemblies that were manufactured between July 1999 and October 1999 because the bearings in those Assemblies had a case depth and/or micro hardness that were below specifications. TRW indicated this was a safety-related recall.

ArvinMeritor filed its September 2000 Defect Information Report based on the information provided by TRW in its August 2000 Defect Information Report.

In March 2001, TRW notified ArvinMeritor of additional separations involving 20-EDL Ball-Socket Assemblies that were manufactured outside the original campaign period. TRW indicated it was conducting further investigation into the root cause of those separations.

Based on that investigation, TRW notified ArvinMeritor on June 21, 2001 that it was expanding the original recall period to cover 11 additional weeks of production. However, in its amendment to its August 2000 Defect Information Report, TRW limited the expanded period to 12K line haul tractor applications. TRW also proposed to handle the expansion as non-safety related, but NHTSA rejected this proposal.

On June 27, 2001, ArvinMeritor amended its September 2000 Defect Information Report to cover TRW's 11 additional weeks of production, but included all vehicle applications as a safety related recall. ArvinMeritor also informed NHTSA it was opening its own investigation into the integrity of 20-EDL Ball-Socket Assemblies that were not otherwise recalled.

Based on its own engineering investigation, ArvinMeritor has now concluded that defects in TRW 20-EDL Ball-Socket Assemblies are caused by a less robust design of the bearing, which leads to higher wear rates and more rapid wear-out than previous TRW

designs. Specifically, the material specifications for the 20-EDL Ball-Socket Assemblies render the bearings in those assemblies more vulnerable to manufacturing variations that can result in inadequate case depth and hardness.

Information Requested under §573.5(c)(6)

In addition to the events described in the immediately preceding section, the following is a chronology of principal events leading to ArvinMeritor's determination:

June 2001 – March 2002: Several meetings were held with TRW to review its processing and field data (i.e., case hardness, case depth, furnace time at carbon set point, furnace carbon potential, end movement, separation rate) for the TRW 20-EDL Ball-Socket Assembly. The following information was learned during these meetings:

- * There have been 135 separations reported by the field that involved 20-EDL Ball-Socket Assemblies as of March 28, 2002.
- * Of that number, 19 separations involved 20-EDL Ball-Socket Assemblies not covered by TRW's August 2000 Defect Information Report or the June 21, 2001 amendment thereto. Also, four additional separations involved 20-EDL Ball-Socket Assemblies for which the date codes are not known, but are believed to have been produced by TRW in May 2000, based on vehicle build dates.
- * The 19 separations are distributed over ten weeks of production that are scattered throughout TRW's entire production run. The Vehicle PPM for these ten weeks range from 218 to 1059 ppm (see attached Vehicle PPM Summary).
- * Four separations have been confirmed on applications other than 12K linehaul tractors.
- * Data provided by TRW identified separations of 20-EDL Ball-Socket Assemblies where the case (micro) hardness of the bearing was 46 HRc and the case depth was 0.017 inch.
- * With respect to separations of 20-EDL Ball-Socket Assemblies not covered by ArvinMeritor's September 2000 Defect Information Report and the first amendment thereto, the case (micro) hardness of the bearings has ranged from 40.0 to 46.3 HRc, and the case depth of the bearing has ranged from 0.012 to 0.016 inch. The known mileage on these Assemblies ranged from 10,494 to 365,185 miles, with the average being 184,772 miles.

June 2001 – March 2002: ArvinMeritor performed a statistical comparison of end movement measurements of 201 TRW's 20-DL Ball Socket Assembly and 635 TRW's 20-EDL Ball Socket Assembly. This comparison, which excluded special cause date codes, indicated there is a statistically significant difference between the end movements of the two assemblies. Specifically, ArvinMeritor's comparison

indicated that 20-EDL Ball Socket Assemblies have approximately two times greater end movement than 20-DL Ball Socket Assemblies.

ArvinMeritor's comparison also indicated a similar (2X) statistical difference when comparing end movement per mileage data and when comparing end movement of 20-DL Ball Socket Assemblies to 20-EDL Ball Socket Assemblies outside the previous two campaigns.

Information Requested under §573.5(c)(7)

This issue does not involve non-compliance with a motor vehicle standard.

Information Requested under §573.5(c)(8)

ArvinMeritor intends to advise vehicle manufacturers to notify owners of vehicles originally equipped with ArvinMeritor axle assemblies containing Model 20-EDL Ball Sockets to replace such sockets with appropriate size TRW DL ball-socket assemblies.

Following is an approximate schedule for the program:

May, 2002	Complete Notification to Affected Original Equipment Axle Assembly
June, 2002	Complete Notification to Affected Aftermarket Purchasers

We trust that the information provided in this document is fully responsive to the requirements of 49 CFR §573.5. All additions or modifications to any of the information given will be reported promptly to NHTSA. Any questions with respect to the information provided should be directed to the undersigned.

Respectfully Submitted,

ArvinMeritor



Debra L. Shumar
Sr. Vice-President,
Quality and Continuous Improvement

TRW Model 20-EDL Vehicle PPM Summary

Blue = Original Campaign

Under Campaign

Red = Expanded ARM Campaign

Code	# X Tubes Shipped	U	F	S	WS	I	V	GM	M	K	P	# Ends Separated	Vehicle %	Vehicle PPM
9F2	4284						2					2	0.05%	466.9
9F3	3859						2					2	0.05%	518.3
9F4	2603	1	2				1			1		5	0.19%	1920.9
9G1	939											0	0.00%	0.0
9G2	3658											0	0.00%	0.0
9G3	3724		5	2			3					10	0.27%	2685.3
9G4	4294											0	0.00%	0.0
9H1	5987						1					1	0.02%	167.0
9H2	3909	1					1					2	0.05%	511.6
9H3	2922											0	0.00%	0.0
9H4	5223											0	0.00%	0.0
9H5	7313	1	1	1			1					4	0.05%	547.0
9J1 *	3115			1	1		1					3	0.10%	963.1
9J2 *	5717		5	5	1					5		16	0.28%	2798.7
9J3 *	4616						3					3	0.06%	649.9
9J4 *	4809											0	0.00%	0.0
9K1	6278						3			1		4	0.06%	637.1
9K2	8578											0	0.00%	0.0
9K3	5227	1	1				2					4	0.08%	765.3
9K4 *	5278		1	2			6		1			10	0.19%	1894.7
9L1	5436		2									2	0.04%	367.9
9L2	4577		1									1	0.02%	218.5
9L3	3809	1				1						2	0.05%	525.1
9L4	2572											0	0.00%	0.0
9L5	5448											0	0.00%	0.0
9M1	5263											0	0.00%	0.0
9M2	4017									2		2	0.05%	497.9
9M3	1886											0	0.00%	0.0
99 Total	125341	5	18	11	2	1	26	0	1	9	0	73	0.06%	582.4

* Special Manufacturing Cause Date Codes

PPM's are based on TRW 20-EDL OEM Shipment Quantities to ArvinMeritor

Green - Separations reported occurred in Australia (1WS-9J2 & 2K-9M2)

U = Unknown
 F = Freightliner
 S = Sterling
 WS = Western Star
 I = International
 V = Volvo
 GM = GM
 M = Mack
 K = Kenworth
 P = Peterbilt

TRW Model 20-EDL Vehicle PPM Summary

Blue = Original Campaign

Under Campaign

Red = Expanded ARM Campaign

Code	# X Tubes Shipped	U	F	S	WS	I	V	GM	M	K	P	# Ends Separated	Vehicle %	Vehicle PPM
0A1	3118											0	0.00%	0.0
0A2	2826											0	0.00%	0.0
0A3	4680											0	0.00%	0.0
0A4	4113											0	0.00%	0.0
0A5	2800											0	0.00%	0.0
0B1	3898											0	0.00%	0.0
0B2	3914											0	0.00%	0.0
0B3	3757											0	0.00%	0.0
0B4	4079											0	0.00%	0.0
0C1	3662											0	0.00%	0.0
0C2	3707	1		1								2	0.05%	539.5
0C3	4186											0	0.00%	0.0
0C4	3816											0	0.00%	0.0
0D1	3353						1					1	0.03%	298.2
0D2	2910						1					1	0.03%	343.6
0D3	3492		1									1	0.03%	286.4
0D4	3603											0	0.00%	0.0
0E1	3244	1	1									2	0.06%	616.5
0E2	3776	1	2				1					4	0.11%	1059.3
0E3 *	3323	2	15	2		3	11		1		2	36	1.08%	10833.6
0E4 *	3200	3	3				2		1	1		10	0.31%	3125.0
0E5	2495											0	0.00%	0.0
0F1	2389		2	1			1					4	0.17%	1674.3
0F2	3866											0	0.00%	0.0
0F3	3469											0	0.00%	0.0
0F4	3674											0	0.00%	0.0
0G1	297											0	0.00%	0.0
0G2	1767											0	0.00%	0.0
0G3	3635											0	0.00%	0.0
0G4	2141											0	0.00%	0.0
0G5	160											0	0.00%	0.0
0H1	104											0	0.00%	0.0
0H2 **	0								1			1	#DIV/0!	#DIV/0!
Unk-0E?	N/A		4									4	#VALUE!	#VALUE!
00 Total	99454	8	24	4	0	3	17	0	3	1	2	62	0.06%	623.4

** Tie rod off a Dana axle

Overall TOTAL	224795	13	42	15	2	4	43	0	4	10	2	135	0.06%	600.5
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In addition to the 0H2 (M), 1 confirmed 0E4 (M), 9F4 (K), and 9H5 (U) may be on Dana Axles because they are no longer on the separation list TRW gave to ArvinMeritor.

20 are on TRW's or ARM's reported list versus their confirmed list

Reported only are in 9F4 (2F), 9K3 (1U), 9K4 (1S), 9L2 (1F), 9L3 (1U+1I), 9M2 (2K)

0C2 (1U), 0E1 (1U), 0E2 (1U), 0E3 (4F), 0E4 (2U), and 0F1 (1F).