SAFETY RECALL BULLETIN

June 2017
17R3 (FL738)
NHTSA #17V-315
Transport Canada #2017-258

Subject: **Detroit™ Axle New Final Drive Thru-Shaft**

Issue Involved

Daimler Trucks North America LLC, on behalf of its wholly owned subsidiary, Detroit Diesel Corporation, has decided that a defect which relates to motor vehicle safety exists on specific Freightliner® New Cascadia® and Western Star® 5700XE trucks with certain Detroit™ New Final Drive Model 4 rear axles.

On certain vehicles, the thru-shaft in the forward rear axle may fracture during normal operation. A sudden fracture of the thru-shaft at highway speed while descending a grade will render the compression brake ineffective and may lead to large debris on the road. These factors, combined with the expected high failure rate, increase the risk of a crash. The thru-shaft will be replaced on affected vehicles.

Correct thru-shafts became effective with rear axles manufactured in Detroit, Michigan, and Saltillo, Mexico, beginning on April 24, 2017. Any New Final Drive Model 4 rear axle manufactured in Detroit, Michigan, or Saltillo, Mexico, between April 25, 2016, and April 24, 2017, will need the thru-shaft replaced. Note that some axles built within this time frame may already have been repaired, and therefore excluded from this Safety Recall.

There are approximately 718 vehicles affected by this Safety Recall.

Vehicles Involved

A list of vehicles located in your area of responsibility that require this correction is attached.

The table below gives descriptive information to help identify the affected units:

Rear Axle Model Series	Rear Axle Model Code	Model Year	Inclusive Rear Axle Mfg. Date (From) (To)	Descriptive Information
Model 4	DA-RT 40.0-4S	2017	April 25, 2016 to April 24, 2017	New Final Drive in New Cascadia and Western Star® 5700XE
Model 4	DA-RT 40.0-4T	2017	April 25, 2016 to April 24, 2017	New Final Drive in New Cascadia and Western Star® 5700XE

Owner Notification

Detroit Diesel will notify owners of equipment incorporating axles identified with this Safety Recall. A copy of the owner letter that will be used by Detroit Diesel is enclosed with this Safety Recall bulletin.

Distributor / Dealer Recall Responsibility

Detroit Diesel repair facilities are to service all axles subject to this Safety Recall. Safety Recall 17R3 is to be performed at no charge to owners on all affected axles under the axle warranty. Please use the appropriate steps, noted below, for indicating that Safety Recall 17R3 has been completed.

Daimler Trucks North America Vehicles

- Check the base label (**Form WAR259**) to see if **Safety Recall 17R3** has been completed. The base label is usually located on the passenger-side door about 30 cm (12 inches) below the door latch. If **Safety Recall 17R3** has been completed, no further work is needed. If base label is not located on the passenger-side door, please affix label (**Form WAR259)** 30 cm (12 inches) from the door latch.
- Upon completion of **Safety Recall 17R3**, clean a spot on the base label (**Form WAR259**), write the Safety Recall Number (**17R3**) on a blank, black completion sticker (**Form WAR261)**, and attach it to the base label.

Ordering Information

1. If you do not have the appropriate Form *or* Labels (DDC_WAR 259, DDC_WAR 260. DDC_WAR 261), they can be ordered from **RR Donnelly** by going to **www.DDCSN.com** and clicking on Literature / Ordering Literature.

2. You can also fax in your order to **(800) 773-1430 – ATTN: Jacqueline**

3. Contact **RR Donnelly** at **(800) 280-4520.**

Parts Information

The necessary parts for this Safety Recall are in service kit P/N: MBA A6123500216K. Use only **ONE** kit per vehicle.

Corrective Procedure

1. Apply the parking brake, chock the wheels, and perform any other applicable safety steps.

2. Raise the rear most axle and support on suitable support stands.

3. Cage the park brakes on the rear axle only.

4. Remove and discard the eight driveline bolts securing the interaxle driveline to the two axles. Four bolts are on each yoke. Two of the bolts are shown in Figure 1.

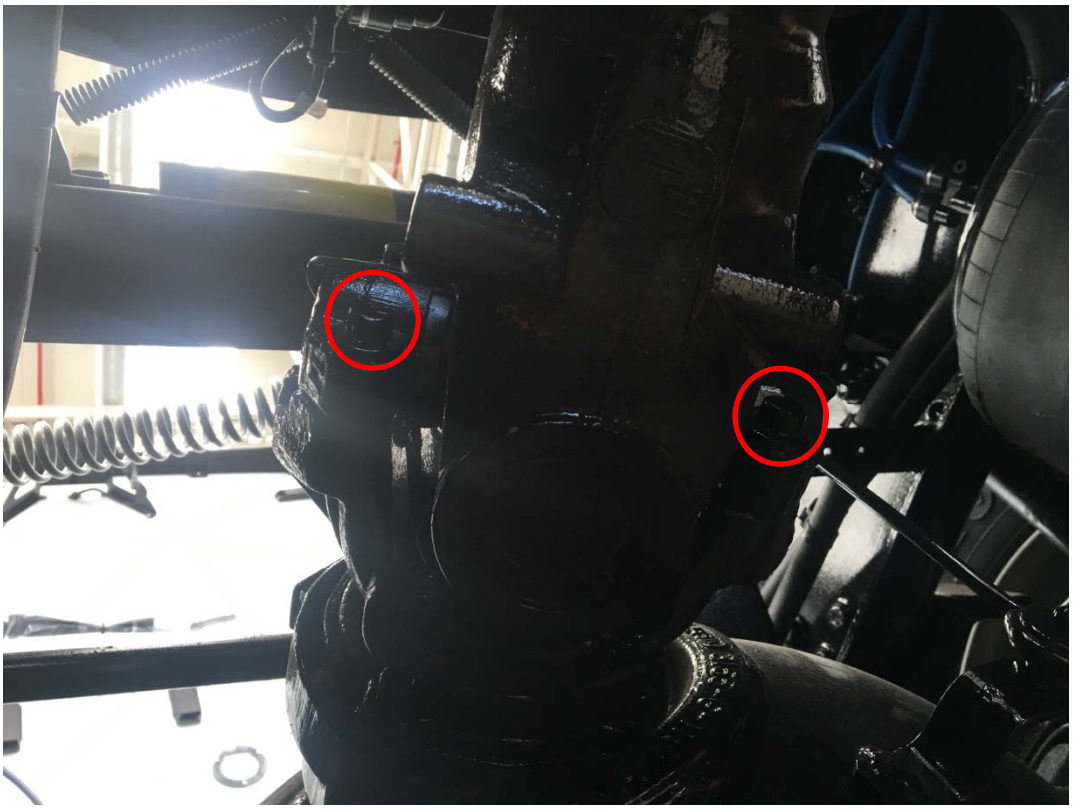

Figure 1 – Yolk Bolt Removal

5. Pull the shaft back to disengage the interaxle driveline shaft yoke from the thru-shaft yoke. Remove the driveline from the truck. See Figure 2.

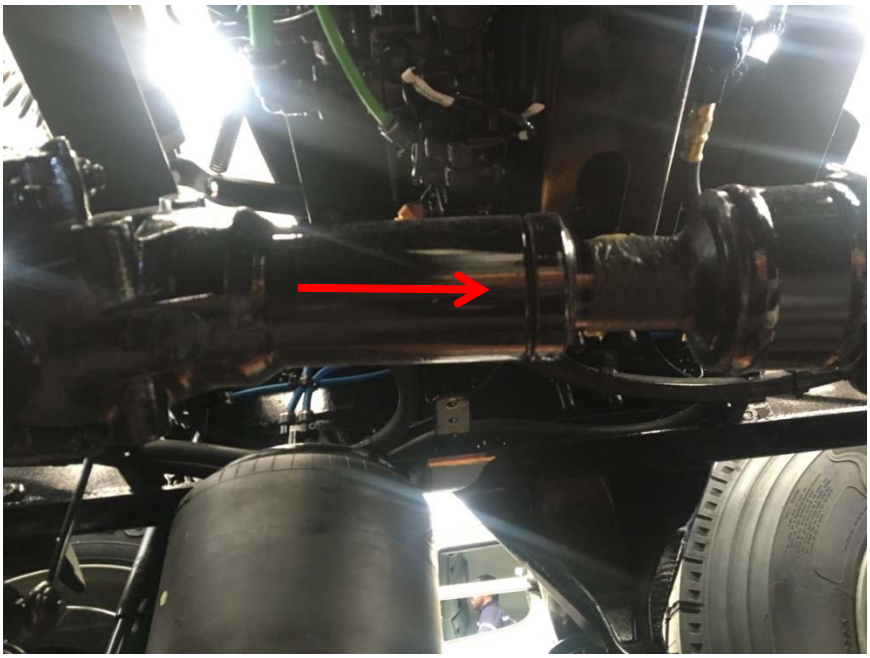

Figure 2 – Interaxle Shaft Removal

6. Install yoke holding tool P/N: 717 589 00 31 00 and remove the output yoke bolt and washer. Save yoke bolt and washer to remove axle shaft later on. See Figure 3.

Figure 3 – Output Yoke Bolt and Washer Removal

7. Install Tiger Tool yoke puller or equivalent and remove yoke. See Figure 4.

Figure 4 – Output Yoke Removal

8. Use Simatec seal puller SP 50 or equivalent to remove the oil seal. Do **NOT** pry the oil seal out to avoid scratching the housing to prevent future oil leaks. Discard the oil seal. See Figure 5.

Figure 5 – Thru-shaft Oil Seal Removal

9. Use an appropriate set of snap ring pliers to remove the snap ring. Measure the thickness and write it down to determine the correct new snap ring to use later on. Discard the old snap ring. See Figure 6.

Figure 6 – Snap Ring Removal

10. Install original yoke washer and bolt into the output shaft and hand-tighten. Use OTC 1176 slide hammer or equivalent to remove the thru-shaft assembly. Save yoke bolt and washer. See Figure 7.

Figure 7 – Thru-shaft Removal

11. Use OTC 1176 slide hammer or equivalent to remove the inner bearing race. See Figure 8.

Figure 8 – Bearing Race Removal

12. Remove the new inner bearing race included in the new thru-shaft and bearing assembly P/N: A6123500116KZ. Use Snap-on bearing race installer or equivalent and install the new inner bearing race into the housing.

13. Lightly lubricate the new bearings with appropriate gear lube. Carefully install the new thru-shaft and bearing assembly into the housing. See Figure 9.

Figure 9 – Thru-shaft and Bearing Assembly Installation

14. Use Snap-on bearing race installer or equivalent and install the new outer bearing race into the housing.

15. Use the measurement from the original snap ring in step 9 to find a similar-sized snap ring provided in the service kit. Using snap ring pliers, install the new snap ring. Make sure it is completely seated into the groove. See Figure 10.

Figure 10 – Snap Ring Installation

16. Install the original output yoke bolt and washer. Make sure the yoke bolt is firmly tightened, but do not tighten the bolt to specification at this time.

17. Attach a dial indicator to the flat surface of the yoke bolt. See Figure 14.

18. Check axial play by using a pry bar and tool P/N: 420 589 01 19 02. Apply force to the base of the output yoke washer. If the dial indicator shows a deflection between **0.03 mm to 0.06 mm (0.0012 inches to 0.0024 inches)**, the end play is correct. If deflection is too large, use a thicker snap ring. If the deflection is too small, use a thinner snap ring. If necessary, re-measure the original snap ring for a base line. When complete, remove the original thru-shaft yoke bolt and washer and discard. See Figure 11.

Figure 11 – Axial Play Measurement

19. Install the new thru-shaft oil seal P/N: A0169970446. Align the seal to the housing. Use a soft-tipped hammer and tool P/N: DSN0M616003 to gently hammer the seal until it bottoms out. See Figure 12.

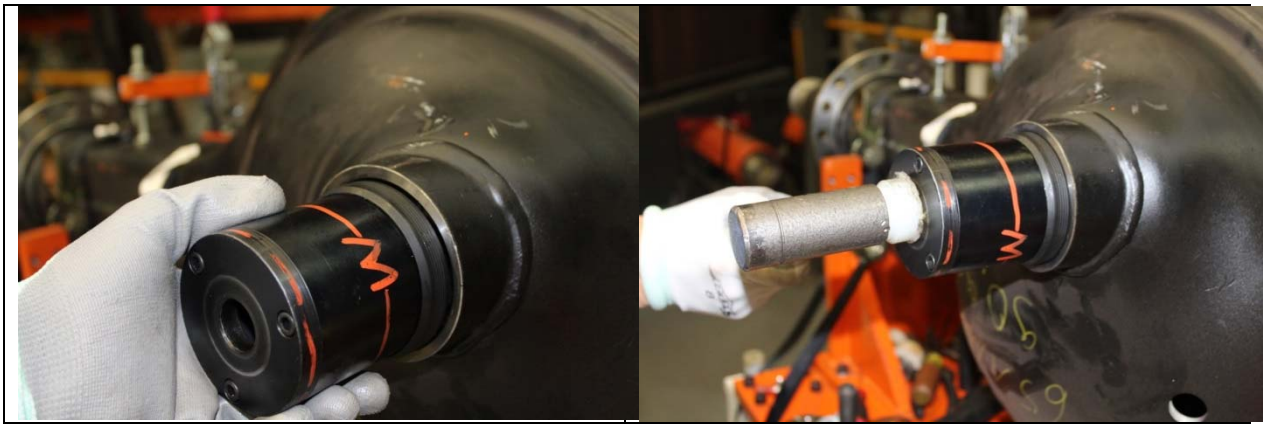

Figure 12 – Thru-shaft Oil Seal Installation

20. Install the yoke to the thru-shaft and use a hammer to gently drive into position. Install new bolt P/N: N000000006750 that comes with pre-applied Loctite, and new washer P/N: A7753539462. The bolt must engage at least five threads. Install yoke holding tool P/N: 717 589 00 31 00. Tighten the bolt to seat the yoke. See Figure 13.

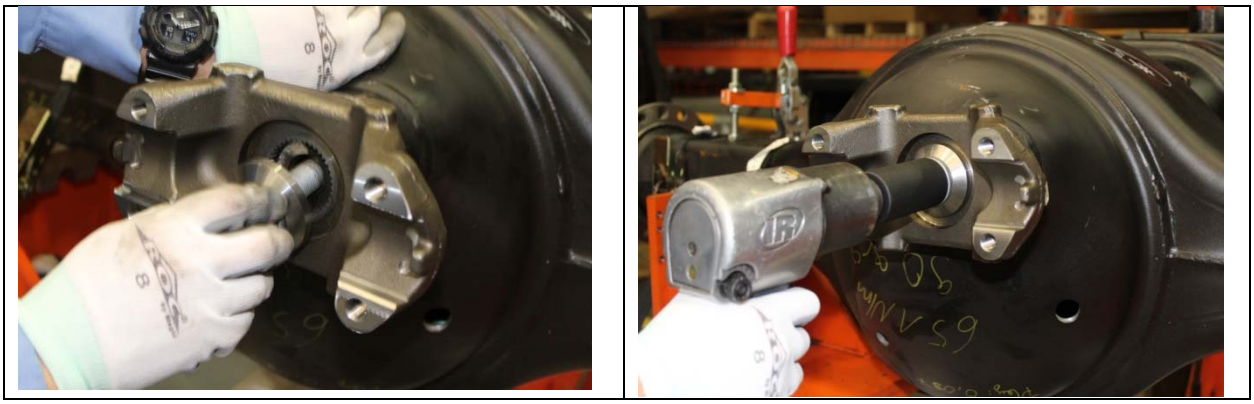

Figure 13 – Yoke Installation

21. Torque the yoke bolt to 300 N·m + 90 degrees. Use paint marks to ensure the 90 degree rotation. When done, remove the yoke holding tool. See Figure 14.

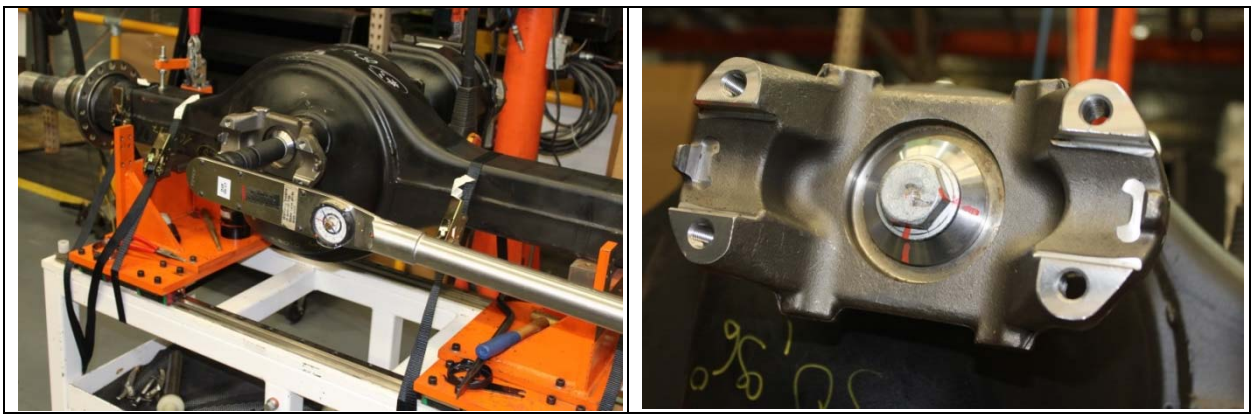

Figure 14 – Yoke Bolt Torque

22. Install the interaxle driveline. Position the two yokes together by sliding the shaft to the forward position. See Figure 15.

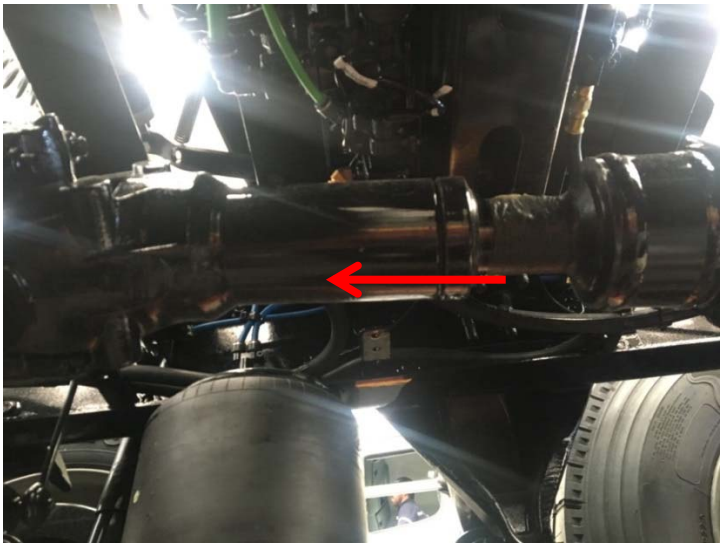

Figure 15 – Intermediate Shaft Installation

23. After the yokes are aligned, install eight new bolts P/N: 23-12891-175 and torque to 156-183 N·m (115-135 lb·ft). See Figure 16.

Figure 16 – Yolk Bolt Installation

24. Uncage the park brakes on the rear axle and lower the truck to the ground.

25. Repairs are complete.

Warranty Information

Notice
Claim administration time, SRT 939-6010A, for 0.3 hours will automatically be added. No additional operation is required or will be allowed

Claim Type:	**04**
Modification	**17R3**
Fault Type:	**ZZ**
Primary Failed Part:	**MBA 7753530135**
Labor Code:	**996-1007A**
Labor:	**2.5 hours**
Parts Return:	**REQUIRED**

Please contact the Detroit™ Customer Support Center at 800-445-1980 or email csc@daimler.com if you have any questions.