NEW FLYER

INSTRUCTION TO SERVICE

ITS: 6807	
SECTION:	219 ENGINE & TRANSMISSION
WRITTEN BY:	Curtis Matthews
SUBJECT:	Driveshaft P/N: (451210) Inspection and Replacement

ITS6807

PART 1 – INSPECT DRIVESHAFT:

1. Turn the main battery disconnect switch to the “OFF” position.
2. Raise bus in accordance with the New Flyer Service Manual.
3. Locate the driveshaft under the bus between the rear axle and the transmission in figure 1.

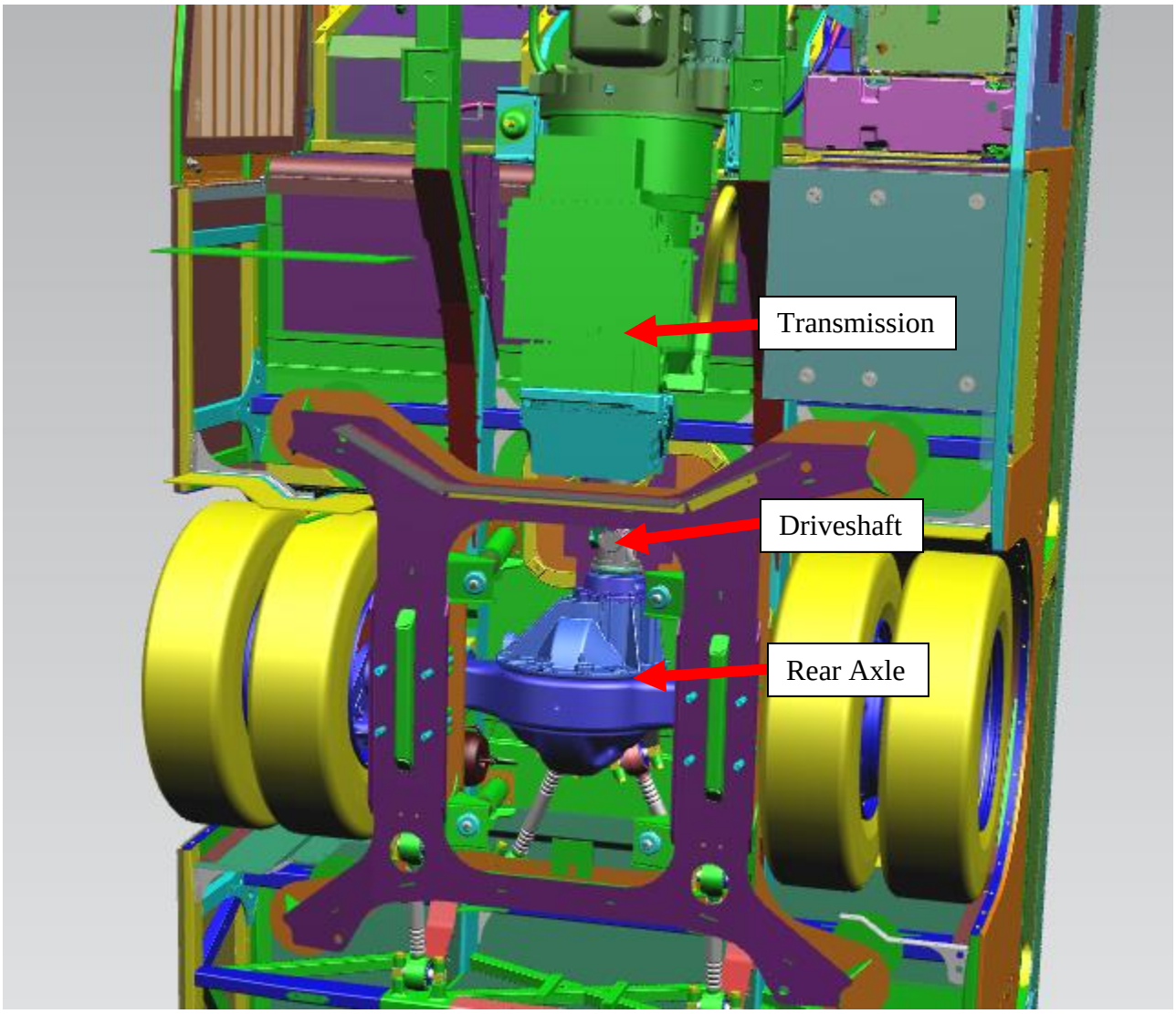

Figure 1: Rear underside of bus

4. Complete the Inspection sheet which can be found at the end of this Instruction while reading steps 5 through 8. Driveshafts that are **APPROVED** do not need to be replaced and driveshafts that are **NOT APPROVED** will need to be replaced.

5. Check for metal dust caps.
    - Ways to identify if the cap is metal:
        - Tack welds on the top of the cap. See figures 2 and 3.
        - There are no raised letters on the top of the cap.
        - The cap attracts a magnet.
    - If the cap is metal, then the driveshaft is **APPROVED**. Record that the cap is metal on the inspection sheet and proceed to step nine of this instruction.
    - If the cap is plastic, proceed to step six.

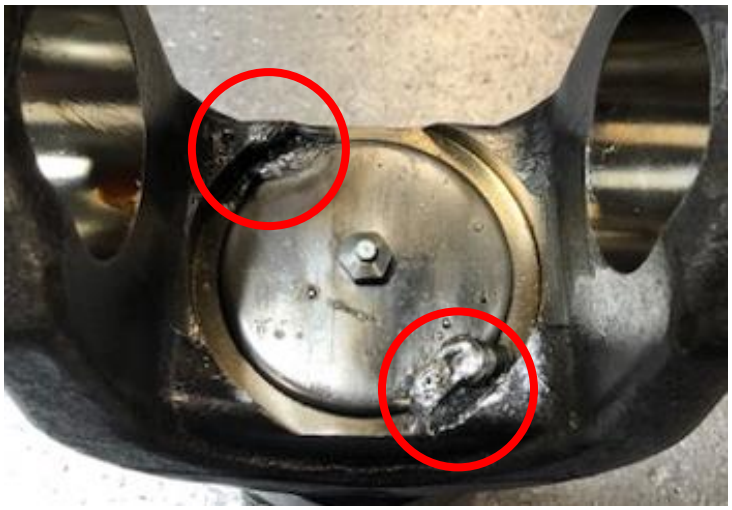

Figure 2: Top view of metal cap with tack welds

Figure 3: Side view of metal cap with tack welds

6. If plastic cap is present, visually check for style of yoke and record on inspection sheet. Replace the driveshaft when materials are available.
   - Style A – Plastic dust cap with balancing lugs. **NOT APPROVED**

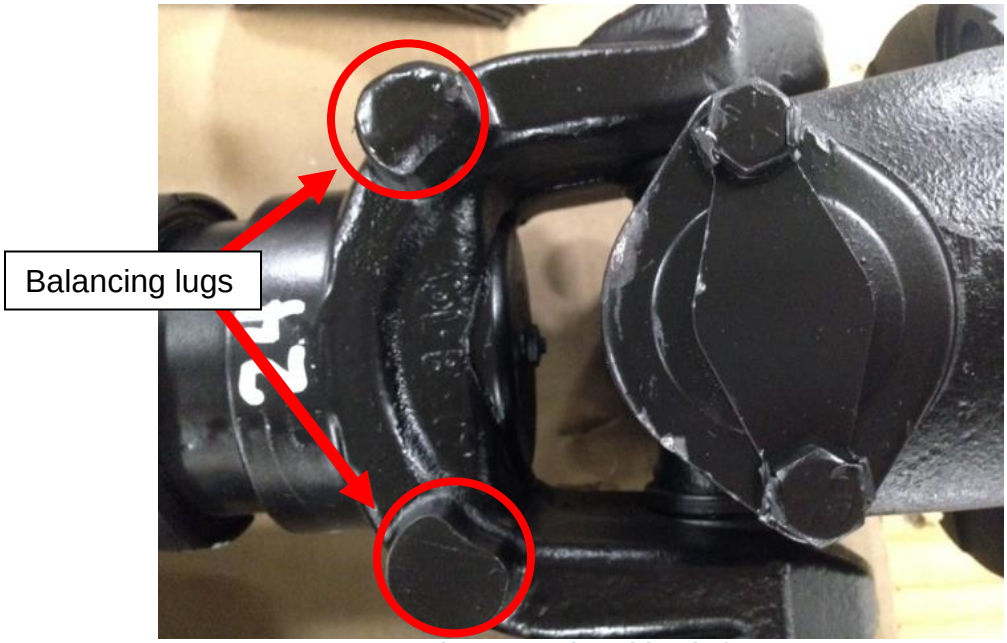

Figure 4: Style A driveshaft

   - Style B – Plastic Dust Cap and extended cutaway. **NOT APPROVED**

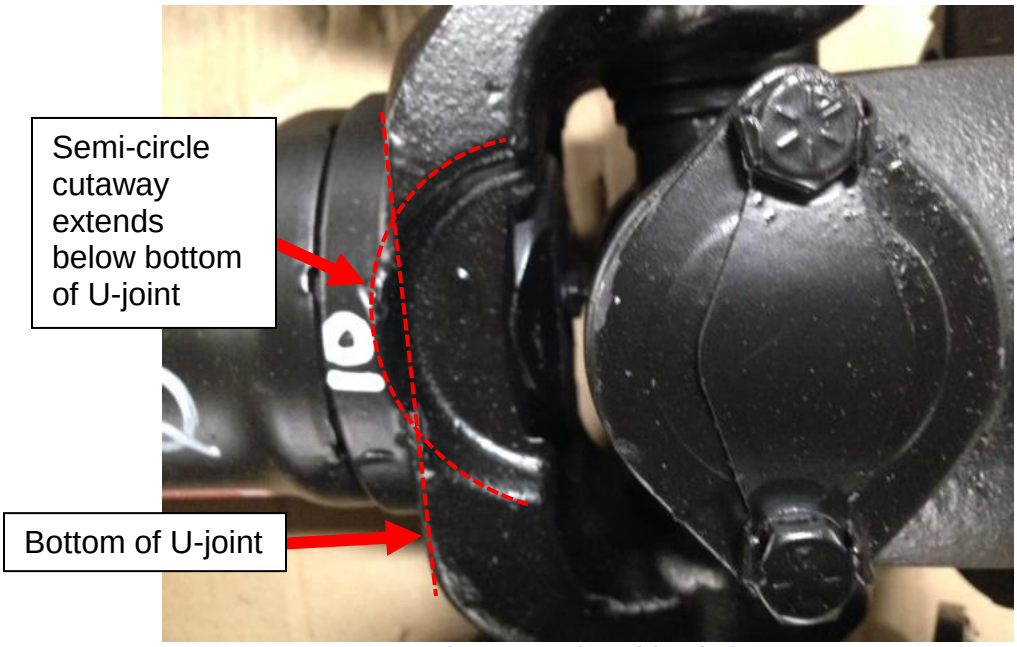

Figure 5: Style B driveshaft

- Style C – Plastic dust cap, and U-shaped yoke. **NOT APPROVED**

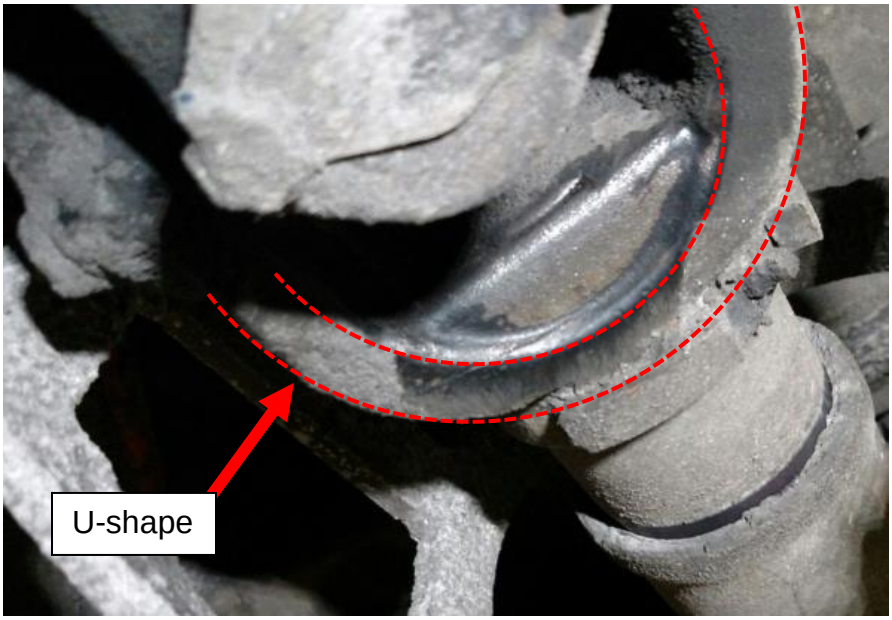

Figure 6: Style C driveshaft

- Style D – Plastic dust cap and shallow cutaway. **APPROVED**

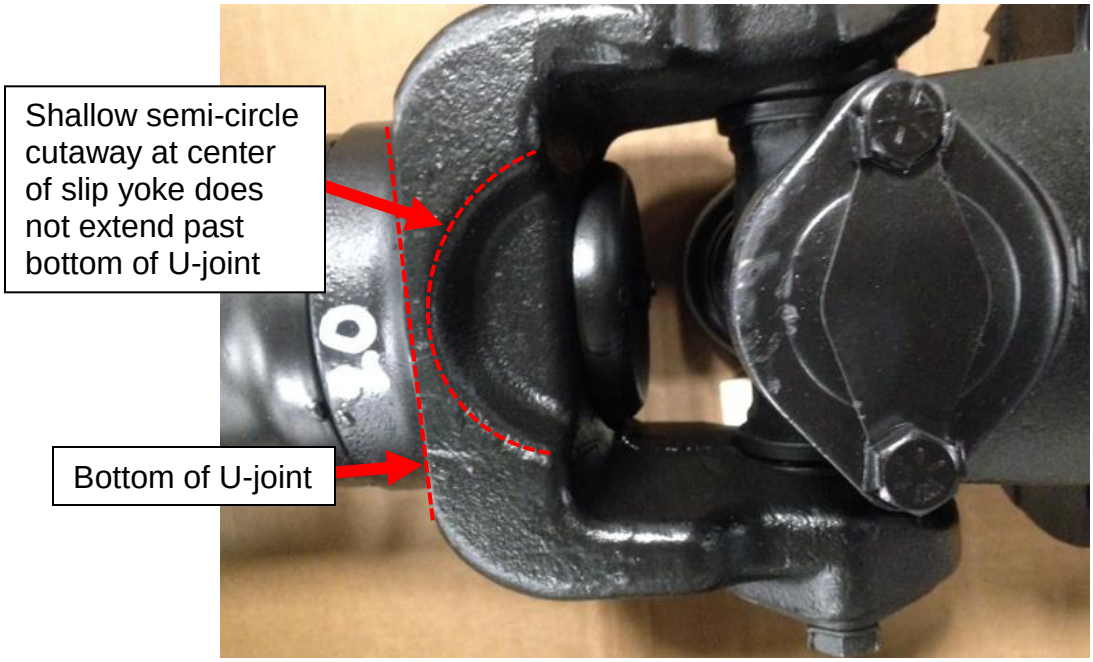

Figure 7: Style D driveshaft

- Style E – Plastic dust cap and horizontal cutaway. **APPROVED**

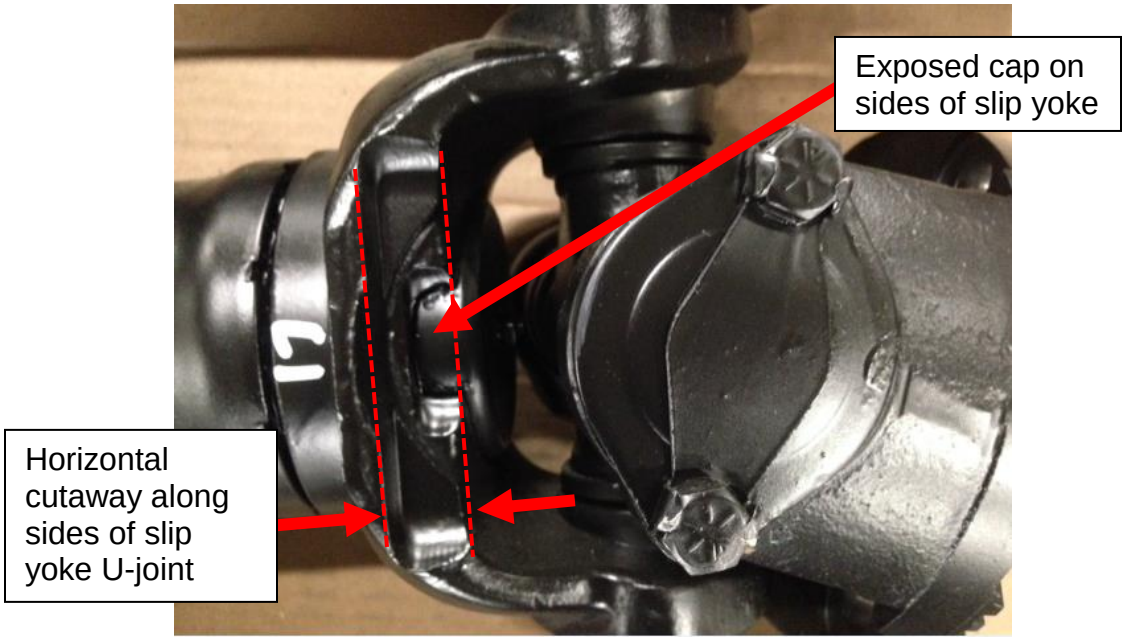

Figure 8: Style E driveshaft

- Style F – Plastic dust cap and oval cutaway. **APPROVED**

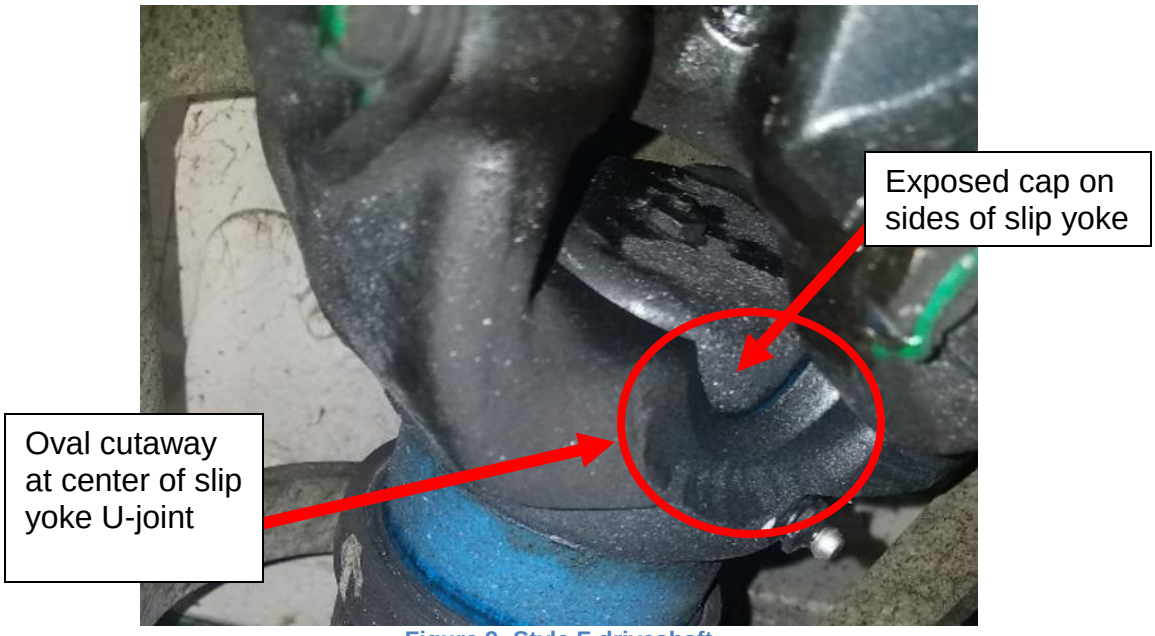

Figure 9: Style F driveshaft

7. Record the date code and work order (W/O) number seen in figures 10 and 11 (if legible).

Figure 10: Date code sticker

Figure 11: Close-up of date code sticker

8. If the driveshaft is **NOT APPROVED**, inspect the slip yoke for cracks at the center of the U-joint as seen figure 12.

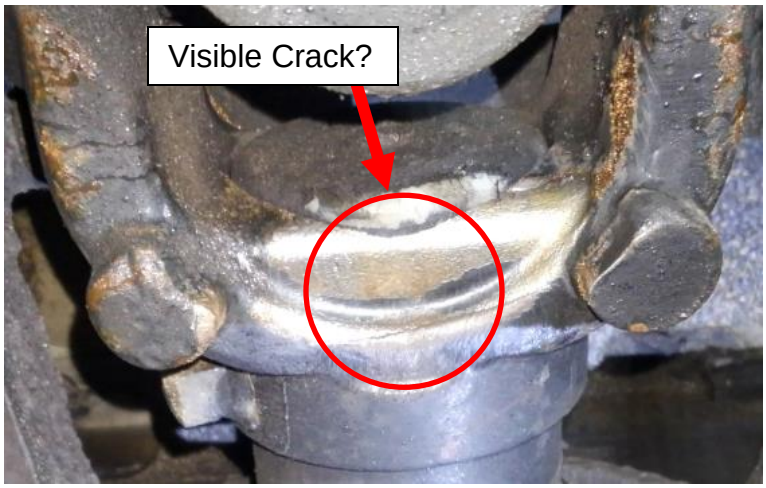

Figure 12: Driveshaft area of concern for cracks

☞ **NOTE: If the driveshaft is NOT APPROVED but has no visible crack, it can continue to be used in service until a replacement driveshaft is available. If it is visibly cracked, the bus is to be held from service until a replacement driveshaft can be installed.**

9. When the attached inspection sheet has been completed, forward it to your New Flyer Regional Support Manager to arrange for replacement parts and return shipping.
10. If the driveshaft is **APPROVED**, proceed to Part 3 – Return Bus to Service. If the driveshaft is **NOT APPROVED**, proceed to Part 2 – Remove and Replace Driveshaft.

PART 2 – REMOVE AND REPLACE DRIVESHAFT:

1. Raise bus in accordance with the New Flyer Service Manual.
2. Support the driveshaft weight with ratchet straps to the bus frame as indicated in figure 13.

⚠ **WARNING:** **For safety, two technicians are required anytime a driveshaft is being suspended or lifted.**

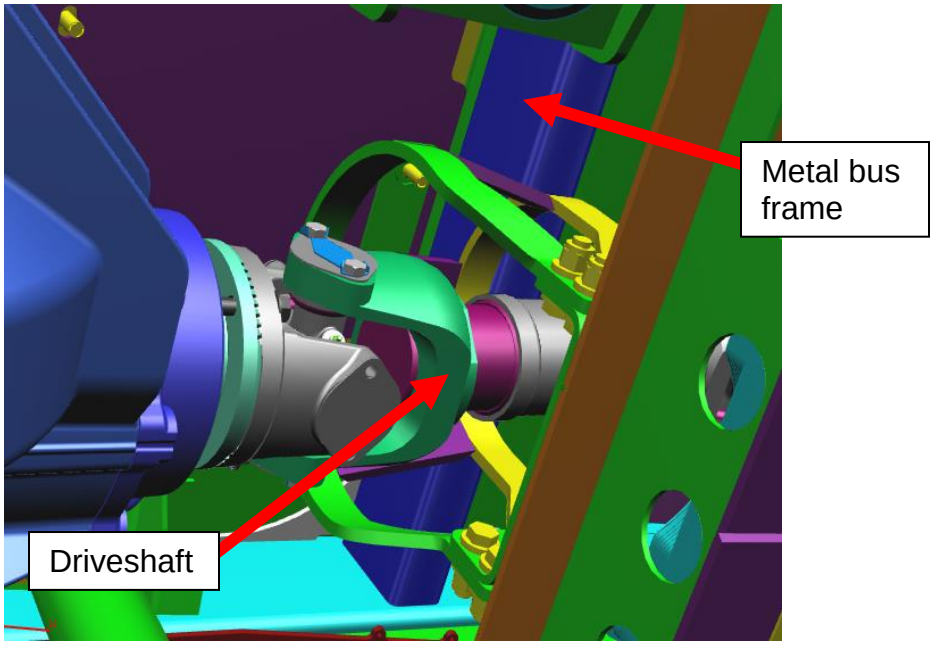

Figure 13: Original driveshaft underside

3. Refer to figure 14 for driveshaft part identification.

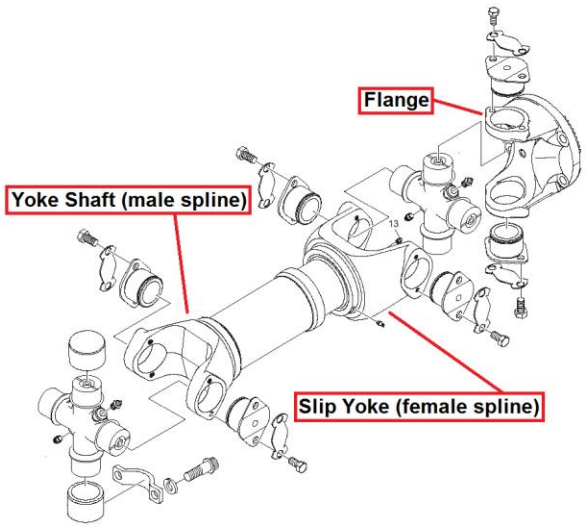

Figure 14: Exploded view of driveshaft parts

4. Remove hardware that fastens the driveshaft yokes to the transmission and the rear axle. Rotate pinion for better visibility of hardware on driveshaft. See figure 15.
   a) Remove 4 screws P/N: (6312877) from the rear axle flange on slip yoke side.
   b) Remove 4 bolts, 4 washers, and 2 bearing straps KIT P/N: (451210) from transmission flange on yoke shaft side.
5. Safely lower the driveshaft.
6. Discard old driveshaft hardware and tag/paint the old driveshaft.

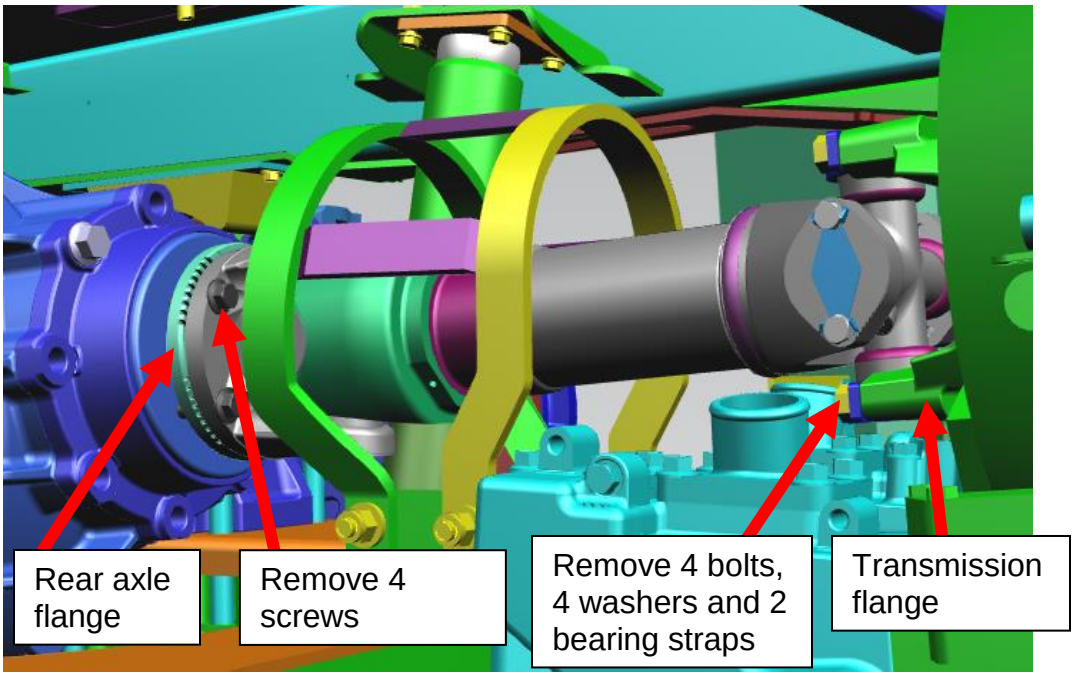

Figure 15: Original driveshaft

7. Support the weight of the new driveshaft KIT P/N: (451210) using ratchet straps similar to note 2 and figure 13.

⚠ **WARNING: For safety, two technicians are required anytime a driveshaft is being suspended or lifted.**

8. Position the new driveshaft such that the mounting holes of the slip yoke side driveshaft flange are lined up with rear axle flange.

9. Mount the yoke shaft cross to the transmission flange and the slip yoke flange to the rear axle flange. Rotate axle for better visibility of hardware. See figure 16.
   a) Fasten the slip yoke flange to the rear axle flange with 4 screws P/N: (6312877). Torque screws to 81 ± 3 FT-LBS DRY.
   b) Fasten the yoke shaft cross bearing cups to the transmission flange with 4 bolts, 4 washers and 2 bearing straps KIT P/N: (451210). Also see figure 17. Torque bolts to 115-135 FT-LBS DRY.

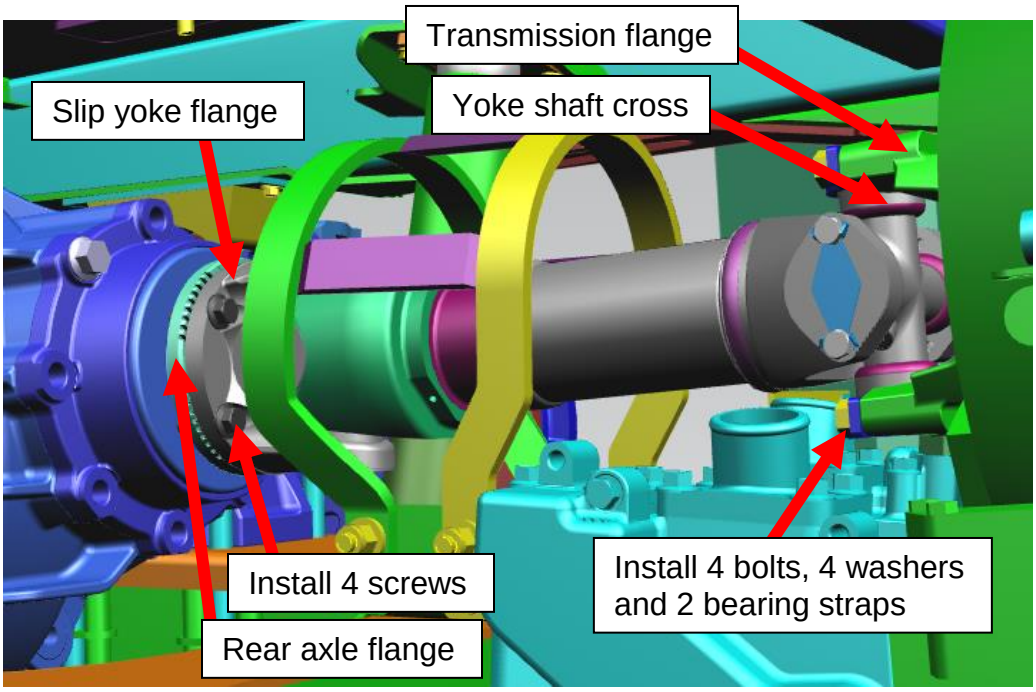

Figure 16: New installed driveshaft on Bus# 1252

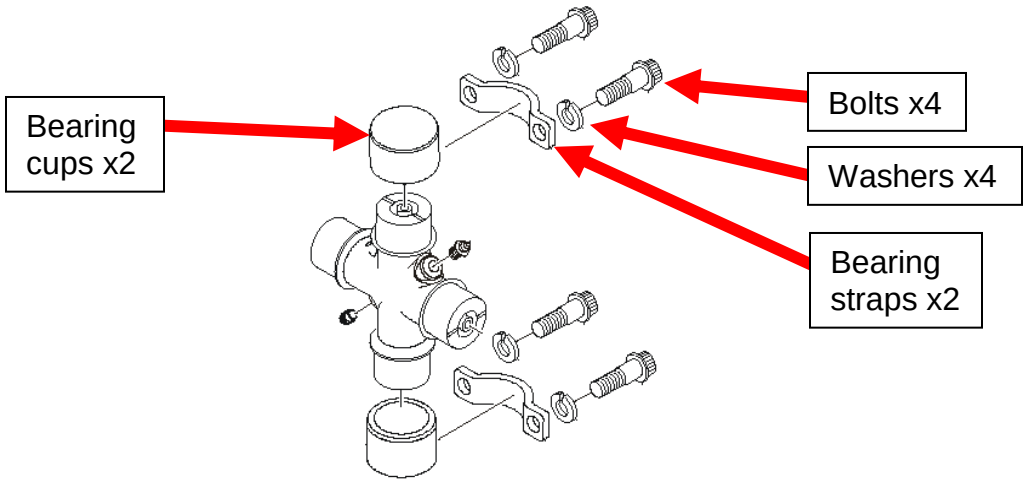

Figure 17: Yoke shaft cross assembly

10. Lubricate the slip joint and universal joints of the driveshaft using grease P/N: (507257) in accordance with the New Flyer Service Manual.

PART – 3 RETURN BUS TO SERVICE:

11. Ensure the inspection sheet has been completed and forward to the New Flyer Regional Product Support Manager to arrange replacement parts and return shipping.
12. Lower bus in accordance with the New Flyer Service Manual.
13. Remove all tools and debris and return the bus to service condition.
14. Turn the main battery disconnect switch to the “ON” position.

LABOUR ESTIMATE

	Operation	Men	Hours	Labour Time M X HR
1	PART 1 and 3 – Inspect driveshaft.	1	0.5	0.5
2	PART 2 - Remove and replace driveshaft (if required).	2	1	2.0

PARTS REQUIRED

Item	Part Number	Description	Qty. per Coach	Units	Notes
2	6312877	SCREW-LOCK M12 X 40 MM LG	4	EA	
5	507257	GREASE-MOBILUX EP-111	1	EA	
6	451210	DRIVESHAFT – ISE/MAN/YOKE	1	EA	

SPECIAL TOOLS REQUIRED

Item	Part Number	Description	Qty. per Coach	Units	Notes
1	NPN	Magnet	1	EA	

NEW FLYER

Driveshaft Inspection Sheet

Bus Number: _____ **Date:** _____

SR: _____ **Technician:** _____

Item	Inspection Item	Result	
1.	Dust cap material. See figures 2 and 3.	Metal - **APPROVED**	☐
		Plastic - Go to item 2	☐
2.	Driveshaft style. (See figures 4 through 9. Caps are not approved only if they are plastic)	Style A - **NOT APPROVED**	☐
		Style B - **NOT APPROVED**	☐
		Style C - **NOT APPROVED**	☐
		Style D - **APPROVED**	☐
		Style E - **APPROVED**	☐
		Style F - **APPROVED**	☐
3.	Date code from sticker (If legible). See figure 10 and 11.	Date Code: WO#:	
4.	Inspect the yokes for cracks, see figure 12. Are cracks visible?	Yes ☐	No ☐

☞ **NOTE: When this inspection sheet is complete, please forward to your Regional Product Support Manager to arrange replacement parts and return shipping.**