SERVICE BULLETIN

M-847 **SAFETY RECALL CODE 054** December 11, 1981

4-SPEED TRANSMISSION—1982 FL/FX MODELS

Routine quality testing has indicated recently that performance problems might exist with respect to some 4-speed transmissions installed on some 1982 FL/FX models. The problems experienced with a few of these transmissions suggest that, unless remedied, they might lead to transmission lock-up and resulting loss of vehicle control.

Although we have not experienced a single field problem to date, Harley- Davidson Motor Co., Inc. has still decided to declare this a safety defect as a precaution in order to allow us to formally recall all 1982 FL/FX model motorcycles shipped through November 3, 1981, for inspection and servicing.

The following charts show the model, VIN range and transmission number range of the affected vehicles.

IMPORTANT

Not all transmissions within the transmission number range will be covered. Only those transmission numbers relating to the listed models are included.

MODEL	V.I.N. FROM	TO
AAK (FLH-80)	010246	017895
ABK (FLH-80 Police)	014562	016853
ACK (FLH-80 Shrine)	014561	016856
ADK (FLH-80 Classic)	010007	018314
AGK (FLH-80 Classic w/sidecar)	012009	017407
AHK (FLH-80 Std.)	014553	016855
BAK (FXE-80)	010089	018407
BCK (FXS-80)	011018	018274
BDK (FXB-80)	010046	017916
BEK (FXWG)	010055	018340

TRANSMISSION NUMBER RANGE
BO 1576 thru 1581
BO 1641 thru 9999
BP 0100 thru 4644

For each vehicle our records indicate was shipped to your dealership, we will ship one each of the following kits for a total of 100% of your requirements:

BELT DRIVE PARTS KIT, Part No. 93402
CHAIN DRIVE PARTS, KIT, Part No. 93403

NOTE

The difference between the above kits is:

Chain Drive Spacer length is .454 in
Belt Drive Spacer length is .401 in.

FLHC Primary O-ring, Part No. 11147, has a larger cross section. Part No. 11125 O-ring is used on all other models.

We will also ship one only of the following kit to be used throughout the campaign:

DEALER TOOL KIT, Part No. 93401

These kits will be shipped no charge, transportation prepaid.

If additional kits are required, contact your Parts and Accessories Account Representative.

All registered owners of record are being notified by mail to contact you and arrange to have the service performed at no charge to them (see enclosed letter). Each registered owner letter will include a Dealer Service Card 054 which must be completed, dated and signed by both the customer and the dealer.

We are including a list of registered owners and a list of unregistered vehicles delivered to your dealership which are involved in this campaign. It is your responsibility to perform the required service on all potentially affected vehicles, including those which may not show up on your lists. We are enclosing sufficient blank Dealer Service Cards for those vehicles. If necessary, additional cards are available through the Harley-Davidson Service Department.

IMPORTANT

If, at any time, you are not sure that a Safety Recall has been completed on a motorcycle, contact the Harley-Davidson Service Department for a computer check of our recall records.

ROUTING:	SERVICE MANAGER	SALES MANAGER	PARTS MANAGER	CHIEF MECHANIC	MECHANIC NO. 1	MECHANIC NO. 2	MECHANIC NO. 3	MECHANIC NO. 4	RETURN THIS TO:
INITIAL HERE									

IMPORTANT

Because only registered owners, as shown on the enclosed list, will receive notification from us, we request that you contact any owners of vehicles still listed as unregistered, warn them of the safety recall, and make arrangements for them to come in for service. We also request that you provide us with their names, addresses and VIN's as soon as possible to enable us to mail them an owner's letter as required by the National Traffic and Motor Vehicle Safety Act, as amended.

4-Speed Transmission Modification Procedure

1. Refer to the current Service Manual for primary case and clutch removal.

NOTE

Drain the oil completely from the transmission case while removing the primary case and clutch assembly.

2. Check the battery. If the battery is wet, remove it from the vehicle or battery acid will be lost during the modification procedure.

3. Remove the transmission sprocket nut and tab washer.

4. Loosen the rear wheel, adjusters and chain/belt guard. Push wheel forward until chain/belt can be removed from the front and rear sprockets. Drape the chain/belt over the transmission case away from the mainshaft area.

5. Remove the sprocket.

NOTE

If the sprocket cannot be removed by applying hand pressure, use a gear puller or some means of ensuring that a one sided load is not applied to the sprocket. Use of a hammer or mallet is not advisable.

6. Remove the oil seal and discard.

7. Remove the spacer to reveal the bushing and the needle roller bearing end face.

NOTE

It may be necessary to use a needle- nose pliers to remove the spacer, as the presence of oil will make it difficult to remove the spacer by hand.

8. The thrust faces of both the spacer and bushing, along with the main drive gear bearing track, will need close examination.

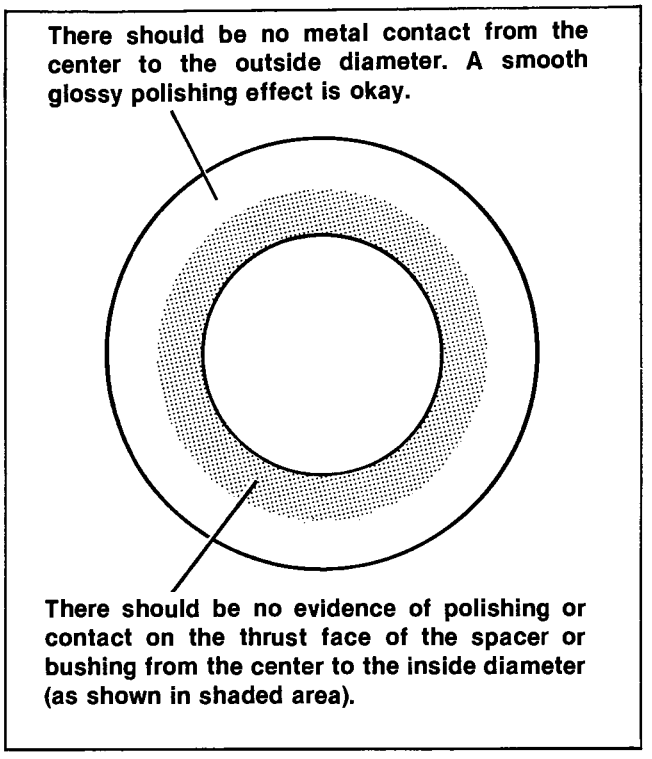

Figure 1. Check These Areas

Examination of Thrust Faces

See Figure 1. Examine the thrust faces of both the spacer and the bushing with the object of finding evidence of metal movement. That is, scoring of metal on both or one of the thrust faces or a transfer of material from one face to another, a degree of polishing is expected. This polishing should be present on the thrust face of the spacer washer from the center to the outside diameter and on the thrust face of the bushing. There should be no evidence of polishing or contact on the thrust face of the spacer washer from the center to the inside diameter. In this event, the transmission should be returned to the Harley-Davidson Motor Co., and a replacement transmission used. This procedure should also be followed if there is any evidence of metal transfer.

If there is any doubt, a replacement transmission should be ordered per Transmission Ordering Procedures at the end of this bulletin.

Examination of Main Drive Gear Bearing Diameter

See Figure 6. Pull the main drive gear outwards. Examine closely the lip of the main drive gear bearing track for possible damage. If a series of equally spaced notches can be seen or felt, a replacement transmission should be ordered per Transmission Ordering Procedures at the end of this bulletin.

9. If both thrust faces of the spacer and bushing, along with the main drive gear bearing track, have passed the conditions specified in the examination instructions, proceed to the next step.

10. Lean the vehicle over to its right hand side to an angle of approximately 45°, or just before the exhaust pipe contacts the ground. Make sure vehicle is stable.

11. See Figures 2 and 3. Saturate the foam plug with cleaning solvent. Using a common paper clip made from the template, push the foam plug into the existing bottom oil hole **no deeper then 1/2 inch** from the face of the bushing. Allow at least 15 minutes for the cleaning solvent to evaporate.

WARNING

Do not use an air hose to speed the evaporation process. Air pressure will force the foam plug into the transmission case.

The foam plug has a dual role in that it ensures the cleanliness of the hole and it provides a dam for the epoxy filler.

12. Mix equal 3 in. strips of the epoxy two part filler using a clean mixing stick on a clean nonporous surface. When completely mixed, remove the plunger from the syringe, and load with the epoxy.

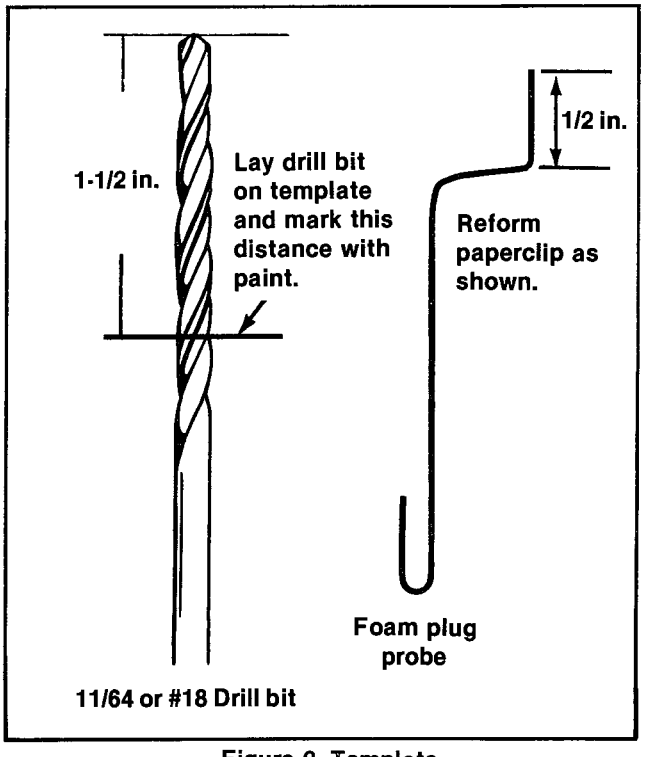

Figure 2. Template

13. See Figure 4. Insert the syringe nozzle into the existing bottom oil hole. Slowly begin to inject the epoxy. The epoxy should flow into the hole; do not force the injection. Allow the epoxy to fill the lower part of the annular space between the bushing and the transmission case. Surplus epoxy should be wiped clean from the face of the bushing and seal bore of transmission case. Two hours, at room temperature, must be allowed for the epoxy to set. By applying heat from a lamp, the process can be accelerated, but **two hours of setting time at room temperature must still be allowed.**

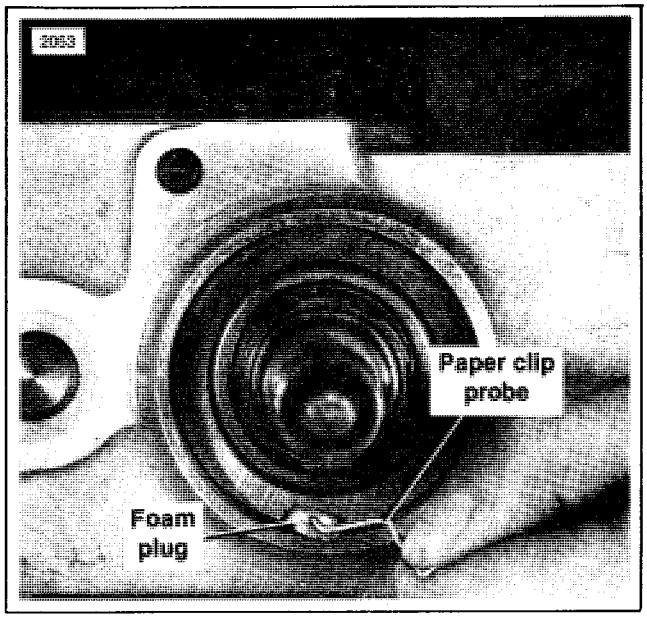

Figure 3. Inserting Foam Plug

14. Check the epoxy for hardness after setting for two hours at room temperature. If the epoxy is hard, place the vehicle upright on the work stand. If the epoxy is still soft, allow time until it is hard.

15. Place a piece of masking tape over the main drive gear bearing track so metal chips will not score the area, or enter the bearing through the splines.

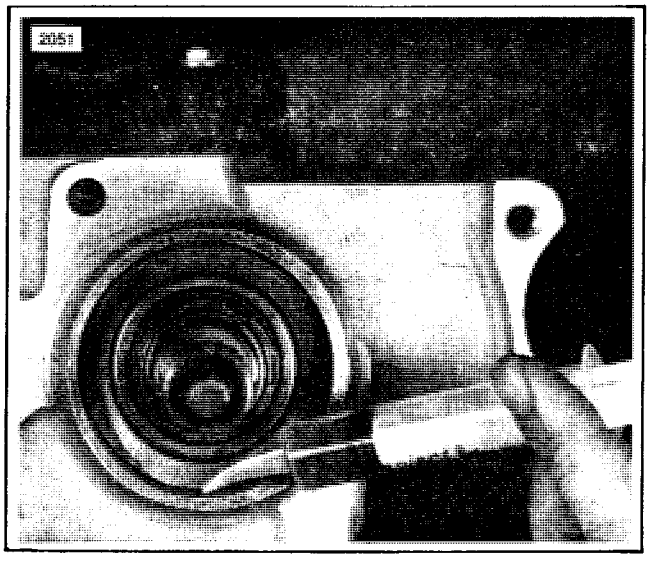

Figure 4. Epoxy Application

16. See Figure 5. Position drill guide bushing over the main drive gear so that it rests against the face of the bushing in the transmission. Note the stamped line on the face of the drill guide bushing and position this so that it is positioned vertically upwards away from the transmission mounting base plate.

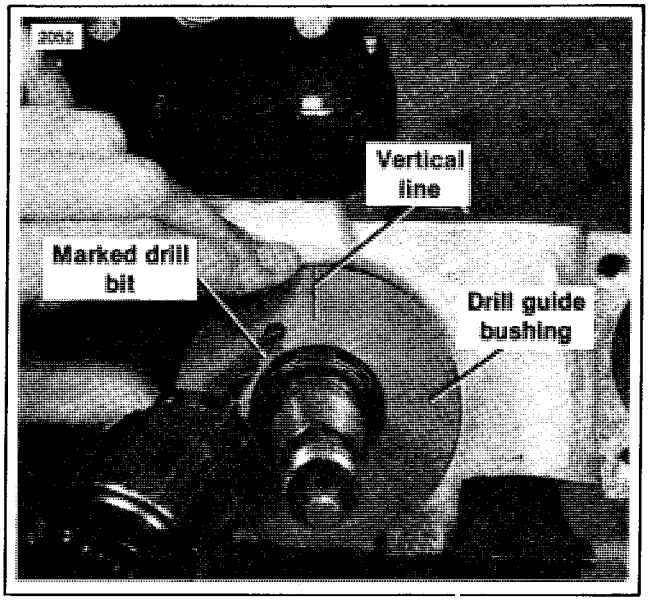

Figure 5. Drilling Procedure

17. See Figure 2. Use a 11/64 in. or #18 diameter drill bit and mark with bright paint as shown on template. Use a hand-held electric or air powered drill. Hold the drill guide bushing firmly in place against the transmission. Carefully pilot through the hole in the drill guide bushing. Drill into the bushing and transmission case to the depth marked on the drill bit. Remove drill bit from the hole in the drill guide bushing. Remove drill guide bushing.

WARNING

The aerosol propellent used in Harley-Davidson CLEANING SOLVENT could create a chemical reaction when combined with unoxidized aluminum chips. Do not breathe the fumes from this reaction. The reaction is exhibited by the appearance of a dark brown stain. It can be stopped by applying a small amount of chain spray. The drilling procedure can be resumed with no detrimental effects.

Use CLEANING SOLVENT to thoroughly clean the hole which has just been drilled and the total area around the main drive gear and bushing face. It is essential that all chips are removed from the annular space between the bushing outside diameter and the transmission housing.

18. Clean the drill bit and dip the point to the depth of 1/2 in. into clean grease. Continue to drill, roughly 1/4 in., the hole into the transmission case until the drill breaks through to the inside of the transmission case. Withdraw the drill bit from the hole and thoroughly clean the hole to ensure that there are no chips remaining in the hole. Chamfer the hole with a round file to remove burrs, recheck the whole area making sure that there are no metal chips remaining in the new hole, or anywhere around the gear, bushing, bearing and epoxy area, as shown in Figure 6. Use CLEANING SOLVENT to achieve the necessary cleanliness.

WARNING

If air pressure is used to assist in metal chip removal, always wear approved eye protection.

19. Reinstall the oil drain plug and fill the transmission with 12 fluid ounces of transmission lubricant, Part No. 99891-80.

NOTE

It is important that only 12 fluid ounces of transmission lubricant be used at this stage; the correct amount must be used.

20. Conduct test in accordance with the following test sequence instructions.

Test Sequence #1

Position the transmission case horizontally and leave for a period of at least 15 minutes. Check to ensure that oil does not leak from the epoxy filling.

NOTE

If leakage does take place, the transmission has not passed the test. Double check to make sure the correct amount of oil has been used. If the amount used is too much, the oil will leak past the bearing. Repeat the test.

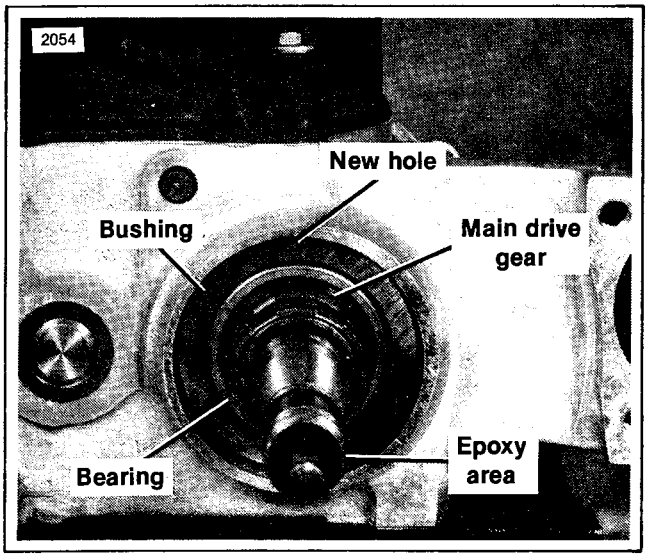

Figure 6. Check For Cleanliness

If the transmission still does not pass the test, the complete transmission must be returned to the Harley-Davidson factory and a replacement transmission used.

Refer to Transmission Ordering Procedures at the end of this Bulletin.

Test Sequence #2

Shift transmission into fourth gear.

Fill the transmission with an additional 12 fluid ounces of transmission lubricant, Part No. 99891-80, to achieve the correct capacity of 24 ounces.

Rotate the mainshaft in a counter clockwise direction to verify that oil runs out of the drilled hole. If oil does not appear, then check to make sure the hole is drilled through into the inside of the transmission case. Drill as necessary, but repeat the cleaning operation if drilling is done to ensure the hole is clean of metal chips. If the test shows the hole is through the case, and the room temperature is below normal, rotate the mainshaft at a higher speed, until oil does appear.

21. If test results are satisfactory, remove the tape from the main drive gear bearing track and clean the area.

22. Slide the new oil seal over the new spacer with the open side of the seal against the inside face of flange. Use transmission oil to make this operation easier. Before placing the spacer over the main drive gear, apply a liberal amount of clean transmission oil into the main drive gear and bushing pocket. Place the spacer in position over the main drive gear so the oil seal rests against the transmission case. Insert the oil seal into its housing, making sure that it is pressed in square to the bore. It is important that the outside face of the oil seal is flush with the edge on the transmission case bore. Under no circumstances should any part of the seal be set below the edge.

23. The sprocket should then be placed over the spline of the main drive gear. The sprocket should never be forced onto the spline. If it is a tight fit, relieve the sprocket by filing to achieve sliding fit. Replace the tab washer and nut. Tighten nut to 100 ft-lbs torque. Bend the tab over one of the nut flats.

24. Replace the chain/belt on the front and rear sprockets.

25. The primary cover and clutch assembly should be assembled according to Service Manual procedure.

Transmission Ordering Procedure

If it is determined that the transmission must be replaced, it will be necessary for you to contact your Parts and Accessories Account Representative. An order will then be entered for the replacement transmission.

The following chart indicates the proper transmission required by model.

MODEL	TRANSMISSION PART NUMBER
AAK ABK ACK AHK	33011-81A
BDK BEK BAK BCK	33012-80A 33015-82 33016-79B 33020-82
ADK AGK	33021-82

The transmission will be shipped to you open account/sixty days, freight prepaid.

After servicing each motorcycle, be sure to completely fill out the special Dealer Service Card provided. Fill in your Dealer Account Number, the Service Code (in this case 054), the Vehicle Identification Number (VIN), and your dealership name and address along with the owner information if it is blank.

The boxes must be marked in either of two ways:

A. If it was necessary to only repair the existing transmission, mark the Letter Box with an "I" Code, and mark the Quantity Box with an "O" Code.

NOTE

The "I" Code normally designates inspection, however, due to the nature of the campaign, an "I" Code will indicate that the existing transmission was repaired, and a repair kit was used.

B. If it was necessary to replace the original transmission, mark the Letter Box with a "C" Code and the Quantity Box with a "1" Code, which indicates a new transmission was installed.

The properly completed card must be signed and dated by both the customer and you. If the transmission was replaced, package the original complete transmission, (which includes the original spacer) along with the unused seal and new spacer from the parts kit assigned to that vehicle. Also, enclose the properly completed Safety Defect card along with the Transmission Replacement Transmittal Sheet, (see sample) attached to the recall card, in the same box as the transmission and parts. This transmittal sheet must be completed to indicate the vehicle identification number and the transmission number. This information will be required so records can be updated to reflect the actual transmission now in the vehicle. No credit will be issued until this information is received. You will be billed for the

unused seal and spacer if not returned to Harley-Davidson Motor Co., Inc.

NOTE

Please be sure to properly package the above parts to ensure that they are not damaged in the return shipment.

Put a return address P-label, Form Number 1248, on the outside of the box containing the replaced parts and above information.

Upon receipt of a properly completed code 054 card, you will be credited as follows:

For each properly completed card received for a repair, (as indicated by an "I" Code) you will be credited 2.5 hours for FL Models and 2.4 hours for FX Models.

For each properly completed card received for replacing a transmission, (as indicated by a "C" Code) you will be credited 2.6 hours for FL models and 2.5 hours for FX Models, along with the cost of the transmission and postage for the returned parts.

Labor credit for the service and/or replacement also covers the cost of shop supplies, transmission oil and dealer paper processing.