WORKSHEET 4-1
Transaxle—Case Removal and Component Identification

Vehicle:	Year/Prod. Date:	Engine	Transmission:

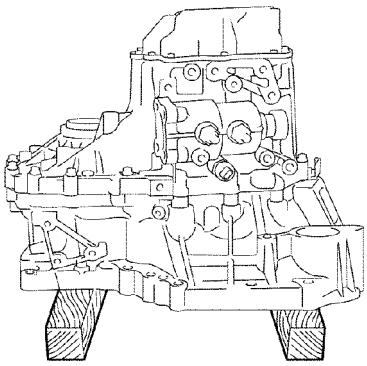
Worksheet Objectives

With this worksheet, you will follow the disassembly of a front-drive transmission to remove the case using the required special tools, make measurements where appropriate, retrieve and apply the needed service information, identify components using the technician handbook and repair manual.

Tools and Equipment

- 5th Gear Puller SST (P/N 09310-17010)
- 5th Gear Replacer SST (P/N 09309-12020-01)
- Hand Tool Set
- Dial Indicator and Stand
- Micrometer, 0-1 in.
- Corolla RM (C Series Transaxle)
- Camry RM (E Series Transaxle)

Section 1: Case Removal



1. Remove the shift and select lever assembly.
2. Remove the lock nut from the output shaft
3. What procedure prevents the output shaft from turning while removing the lock nut?

4. Measure 5th gear thrust clearance and radial clearance:

   Thrust Clearance: _____ Specification: _____

   Radial Clearance: _____ Specification: _____

5. Remove 5th gear from the output shaft

6. What SSTs are used to remove 5th gear from the output shaft?

   _____

   _____

7. Remove the fifth gear synchronizer hub and 5th gear from the input shaft.

8. What SSTs are used to remove 5th gear and the synchronizer hub from the input shaft?

   _____

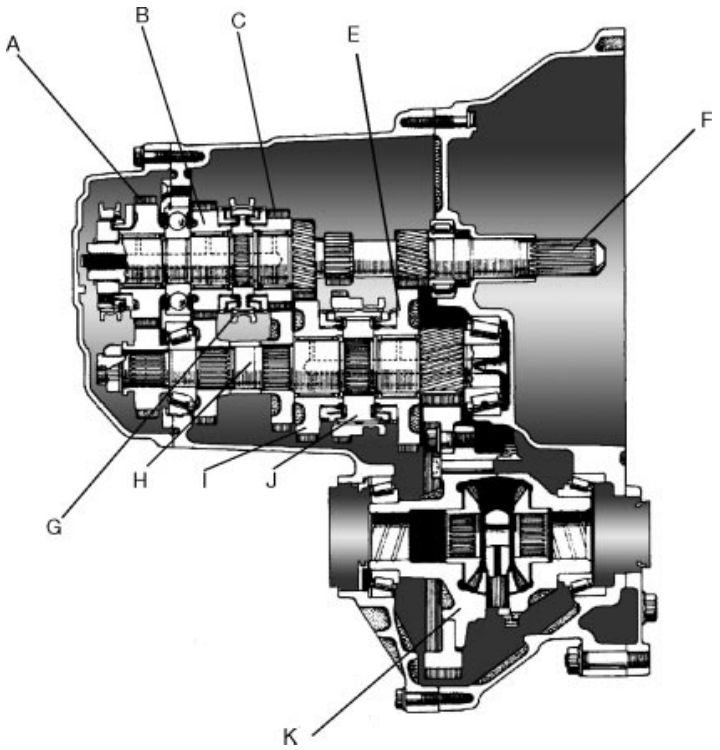
   _____

9. Remove the three snap rings from the shift shafts and remove the spring and detent balls.

10. Remove transaxle case

Section 2: Component Identification

Match the component names listed below with the parts in the illustration. Place the letter that identifies the part on the line in front of the component name.



_____ 1. 1st gear

_____ 2. 2nd gear

_____ 3. 3rd gear

_____ 4. 4th gear

_____ 5. 5th gear

_____ 6. Input shaft

_____ 7. Output shaft

_____ 8. Differential

_____ 9. 1-2 Synchronizer & reverse

_____ 10. 3-4 Synchronizer

Section 3: Powerflow

1. With the transmission in neutral, tip the transmission up to rotate the input shaft while holding the differential from rotating. What are the speed gears on the output shaft doing?

2. How are the speed gears engaged to the output shaft?

3. With the transmission in neutral, hold the input shaft and rotate the differential. What are the speed gears on the input and output shaft doing?

4. How are the speed gears lubricated when the vehicle is being towed with the front wheels on the ground? (Dingy tow)

5. What does the owners manual recommend about dingy towing a front wheel drive vehicle with manual transmission?

6. Trace the power flow from the input shaft through the transmissions to the output shaft. Be prepared to demonstrate power flow to your instructor.

7. The rear wheel drive transmission has a direct drive in 4th gear. Does the transaxle have a direct drive?

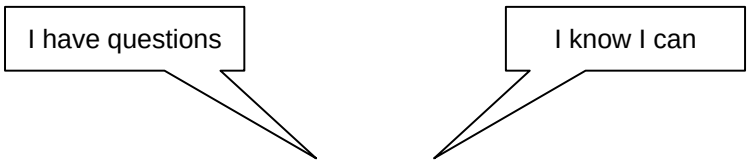
8. Describe how the output shaft's direction of rotation changes from the input shaft's rotation in reverse gear.

Instructor's Initials: _____

Transaxle—Case Removal & Component Identification

Name: _____ Date: _____

Review this sheet as you are doing the Transaxle—Case Removal & Component Identification worksheet. Check each category after viewing the instructor's presentation and completing the worksheet. Ask the instructor if you have questions regarding the topics provided below. Additional space is provided under Topic for you to list any other concerns that you would like your instructor to address. The comments section is provided for your personal comments, information, questions, etc.



Topic			Comment
Locate the model specific disassembly procedure in the repair manual.			
Use appropriate SSTs to remove 5th gear.			
Identify all gears in the transaxle.			
Identify all synchronizers in the transaxle.			
Explain how speed gears are connected to the output shaft.			
Trace powerflow through all gears.			
Describe transaxle lubrication when the vehicle is dingy towed.			
Can find the towing recommendation in the owner's manual.			

Notes