

# PONTIAC

## Service Craftsman News



No. 10 S-277

November, 1955

# ADDITIONAL 1956 INFORMATION

### PONTIAC PRE-DELIVERY AND 2000 MILE INSPECTION

A satisfied customer is a dealer's most important asset. As a Service Craftsman, you play a vital part in creating and maintaining customer satisfaction.

Countless hours have been spent in planning, engineering, styling and manufacture of the new 1956 Pontiac . . . to make it the best yet produced. All this, and the sales effort of your dealership, can go for naught if the customer is displeased because some minor fault adversely affects operation or appearance.

New cars are not given retail service or adjustment before delivery to the dealership. Therefore, it is imperative that a thorough job be done on pre-delivery service. This will reduce or even eliminate customer return for minor corrective work.

The "Pontiac New Car Pre-Delivery and 2,000 Mile Inspection and Adjustment" form has been prepared to simplify your job and at the same time, make certain no detail is missed.

This form is revised yearly to include all operations made necessary by model changes. Don't overlook these important revisions for 1956.

#### Inspection and Road Test

Check hood latch and safety catch; check battery for cleanliness (battery should be cleaned on 2000 mile inspection) and inspect felt wick on electric antenna.

Other differences on the form will be noted due to the different service requirements of the two types of Hydra-Matic transmissions used in 1956.

Supplies of the Pontiac New Car Pre-Delivery and 2,000 Mile Inspection and Adjustment form can be

ordered on the regular Sales Promotion and Service Material order from Drake Printing, 2000 W. Eight Mile Road, Detroit, Michigan. The form number is S-10.

Remember, first impressions are often lasting impressions . . . and the quality of your work on these important service operations is the first step in creating a satisfied customer.

### 1956 SERVICE BRIEFS

#### FRONT SUSPENSION PIVOT PIN INSTALLATION—1956

Upper and lower pivot pins in the front suspension will be installed as in the past on the left hand side, but starting with 1956 the pins will be installed from the rear on the right hand side. This makes it necessary to lubricate the pivot pins on the right hand side from the rear.

This change is to eliminate the tendency of the pin to loosen under some driving conditions. When installed from the rear (on the right) the pin tends to tighten. Some older craftsman may remember when left hand threads were first put on wheel studs on the left hand side of the car. That was done for the same reason.

**EDITORS NOTE:** The final Service Craftsman Examination for 1955 was included in the October News. In order to qualify for 1955 Craftsman Awards all completed examinations must be returned to your Zone Office not later than November 15, 1955.

### HARMONIC BALANCER BOLT TORQUE

Beginning with 1956 models the harmonic balancer bolt will be tightened to 130-160 lb. ft. torque. When less torque is used, the hub may work on the crankshaft causing damage.

### CAMSHAFT IDENTIFICATIONS—1956

The two camshafts used on 1956 models can be identified by a numeral stamped on the front end of the shaft. The numeral 0 identifies the Synchro-Mesh camshaft. The numeral 4 identifies the Hydra-Matic camshaft. These are the last digits of the respective part numbers.

### STALLING DUE TO CARBURETOR ICING

In all cases of carburetor icing check exhaust gas passage in throttle flange for carbon build up. Clean holes in manifold and manifold surface. Always use new gasket to ensure against leak.

### WHEEL DISCS ON DELUXE STATION WAGONS

Wheel discs are now standard equipment on all deluxe station wagons. As on other models they will be shipped loose for dealer installation.

### DISCONNECT VACUUM LINE WHEN SETTING TIMING

To avoid any possibility of vacuum advance on idle affecting engine timing, disconnect distributor vacuum line before making timing setting. Use tape over vacuum port to avoid excessive air leak into carburetor and manifold.

### CHOKE SETTING—ROCHESTER 4GC (HM)

The choke setting on 1956 Rochester 4GC carburetors for Hydra-Matic equipped cars has been changed to one notch rich instead of center index.

### CORRECTION OF STAINED CATALINA HEADLINING

Dark stains on headlining of Catalina Coupes adjacent to exposed roof bows is caused by "Bleeding" of the deadener used on the roof panel. Specifications call for the use of a strip of Meritas Cloth (sealing strip) at this point. If a staining condition is experienced, the sealing strip was not installed.

When the headlining is replaced, and to prevent recurrence of this condition, a strip of oil cloth or imitation leather 4 inches wide should be installed from one side rail to the other over each roof bow. These strips should be cemented to the roof deadener pad with 3M trim cement with the enameled side of the oil cloth or the face of the imitation leather against the roof pad.

### USE OF GUIDE T-3 SAFETY AIMER

The following information supplements the aiming instructions given in the October 1955 Service Craftsman News.

#### ATTACHING AIMER TO HEADLAMP

Upon attaching the T-3 Safety Aimer to a headlamp equipped with Guide T-3 Sealed Units, latch the lower hook first and the upper hooks last.

To remove the T-3 Safety Aimer, unlatch the upper hooks first and the lower hook last.

This procedure has been found to be helpful in obtaining an accurate aim of the lamp.

#### USING AIMER ON 1955 MODEL

When installing Guide T-3 headlamps on 1955 models equipped with Guide headlamps having retaining rings with attached aiming lugs, install a spring clip on each unit as shown in Fig. 1 to ensure rigidity of the assembly. Leave clip in place after aiming. Clips are available through G.M.P.D. Warehouses under part number 5947710 (package of 10).

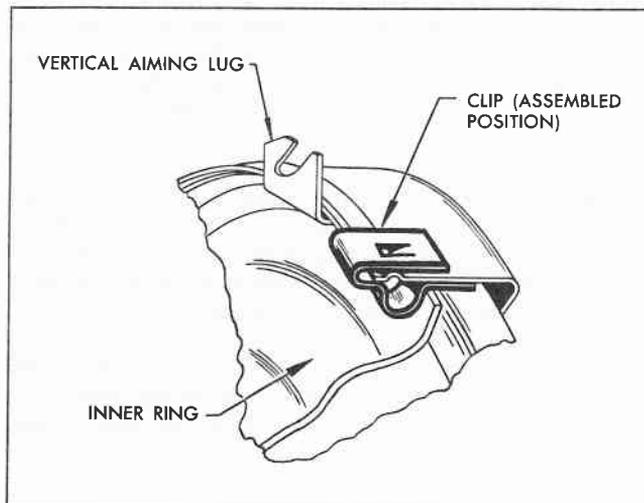


Fig. 1 Spring Clip Installed

### NEW TYPE FINISH NOW IN PRODUCTION

A new gloss finish Sandalwood and Sun Beige color paint of improved durability is being used on the Custom 2 and 4-door Catalina models built in the Pontiac Plant only. The code letters for these colors are S for the Sandalwood and T for the sun Beige. Possible combinations are SS, TT, ST, and TS. (Lower body color symbol given first.)

A notification label (Fig. 2) concerning this finish is affixed to the vertical cowl surface above the body identification plate and on the inside of the glove compartment door of models so painted.

**NOTICE**  
**IMPORTANT**  
**EXTERIOR**  
**FINISH**

Body, hood, and fenders of this car are painted with a new gloss finish of improved durability. This paint is incompatible with lacquers and synthetic enamels presently in common use.  
Consult an authorized Pontiac Dealer for special technical information should repairs or service be required.  
**DO NOT DETACH**

Fig. 2 Notification Label

**IMPORTANT NOTICE**

In order to properly appreciate the maximum inherently improved durability and beauty characteristics of the finish on this car... the use of polishes (wax or silicone) of any type is **NOT RECOMMENDED** for a 60 day period following factory application of paint.

Fig. 3 Glove Box Card

In addition to this an "Important Notice" card (Fig. 3) is placed in the glove compartment.

Complete service information on the new finish will be released as soon as available. Refer to "News Flash" No. 55-31 dated Nov. 4, 1955 for Preliminary Information.

**PRELIMINARY 1956 FLAT RATE INFORMATION**

**CLUTCH**

6-730 Flywheel - SF - Replace (2.8) . . . . . (0.66)

Includes: R & R Transmission, Starter and Make All Necessary Adjustments

**Combinations**

- A. Torus Members and/or Torus Cover - SF - Replace (.3) . . . . .
- B. Flywheel Rear Housing Assembly - SF - Replace (.5) . . . . .
- C. Flywheel Rear Housing Front Seal - SF - Replace (.7) . . . . .

6-743 Flywheel Housing Assembly - SF - Replace (3.3) (0.683)

Includes: R & R Transmission and Make All Necessary Adjustments

**Combination**

- A. Flywheel Housing Front Oil Seal - Replace (.2)

**STRATO-FLIGHT HYDRA-MATIC TRANSMISSION**

**Adjustments**

7-302 Strato-Flight Linkage, Complete - Check and Adjust (.6) . . . . . (4.019)

Includes: Throttle and Manual Linkage

Does Not Include: Adjust Carburetor

7-303 Throttle Control Linkage, Strato-Flight - Check and Adjust (.4) . . . . . (4.040)

Includes: Throttle Linkage and TV Linkage at Carburetor and Transmission

Does Not Include: Adjust Carburetor

7-305 Transmission Oil Pressure - SF - Check (.3) . . . . . (4.216)

**Assembly**

7-306 Transmission Assembly - SF - Inspect in Car (1.0) (4.003)

Includes: R & R and Clean Oil Pan and Screen, Check and Adjust Linkage Complete

If Authorized to Remove Transmission for Repair Cancel This Operation

**Combinations**

- A. Pressure Regulator Valve - Replace and/or Overhaul (.1) . . . . .
- B. Accumulator and Servo Body - Replace (.1) . . . . .
- C. Accumulator and Servo Body - Overhaul (.4) . . . . .
- D. Control Valve Assembly - Replace (.2) . . . . .

7-307 Transmission Oil Pan and/or Gasket - SF - Replace (.5) . . . . . (4.195)

Includes: Clean Oil Screen

7-308 Transmission Assembly - SF - Replace (2.6) . . . .  
(4.003)

Includes: R & R Starter, Check and Adjust Linkage,  
Check Oil Pressure

Combination

A. Flywheel - Replace (.2) . . . . .

7-309 Front Sprag Clutch and/or Overrun Clutch Assembly  
(4.167) - SF - Replace (4.5) . . . . .

Includes: R & R Transmission, Valve Body, Front  
Pump, Front Unit Coupling and All Necessary  
Checks and Adjustments

Combinations

A. Front Sprag and Overrun Clutch Assembly -  
Overhaul (.6) . . . . .

B. Front Sprag Only - Replace (.1) . . . . .

7-310 Rear Sprag Clutch and/or Neutral Clutch - SF -  
(4.180) Replace (5.3) . . . . .

Includes: R & R Transmission, Rear Planetary Unit  
and Make All Necessary Checks and Adjustments

7-311 Transmission Case - SF - Replace (6.1) . . . . .  
(4.103)

Includes: R & R Transmission, Check Oil Pressure  
and Adjust Linkages

7-312 Accumulator and Servo Assembly - SF - Replace  
(4.226) (.6) . . . . .

Transmission in Car - Includes: R & R and Clean  
Oil Pan and Screen

Combination

A. Accumulator and Servo Assembly - Overhaul  
(.3) . . . . .

Planetary Units

7-313 Front Planetary Unit - SF - Replace (3.1) . . . . .  
(4.161)

Includes: R & R Transmission and Make All Nec-  
essary Checks and Adjustments

Combination

A. Torus Check Valve - Replace (.1) . . . . .

7-314 Front Unit Coupling Assembly - SF - Replace  
(4.156) and/or Check Front Unit End Play (3.7) . . . . .

Includes: R & R Transmission and Make All Nec-  
essary Checks and Adjustments

Combination

A. Front Unit Coupling Assembly - Overhaul (.6)

7-315 Rear Planetary Unit and Clutch Assembly - SF -  
(4.177) Replace and Check Rear Unit End Play (5.3) . . . . .

Includes: R & R Transmission, Front Pump, Center  
Bearing Case Support Assembly, Main Shaft, Output  
Shaft, Neutral Clutch and Rear Band

Combinations

A. Rear Unit Assembly - Overhaul (.6) . . . . .

B. Center Bearing Case Support and Neutral  
Clutch - Overhaul (.3) . . . . .

C. Rear Sprag Clutch Only - Replace (.1) . . . . .

7-316 Reverse Unit Planetary Assembly - SF - Replace  
(4.192) (1.7) . . . . .

Transmission in Car - Includes: R & R Rear Exten-  
sion Housing, Governor, Oil Cooler and Rear Pump

Combination

A. Rear Pump - Overhaul (.3) . . . . .

7-318 Parking Brake Pawl Assembly - SF - Replace (2.3)  
(4.290)

Transmission in Car - Includes: R & R Oil Cooler,  
Pipes and Adapter, Rear Pump and Valve Body

Oil Pumps and Governor

7-320 Front Oil Pump - SF - Replace (4.5) . . . . .  
(4.226)

Includes: R & R Transmission, Torus Members, Fly-  
wheel Housing, Front Unit Coupling and Check  
Front Unit End Play

7-322 Pressure Regulator Valve - SF - Replace and/or  
(4.216) Overhaul (.2) . . . . .

7-324 Governor Assembly - SF - Replace (1.5) . . . . .  
(4.256)

Transmission in Car - Includes: R & R Drive  
Shaft, Extension Housing and Oil Cooler

Combination

A. Governor Assembly - Overhaul (.3) . . . . .

7-325 Rear Oil Pump - SF - Replace (1.7) . . . . .  
(4.200)

Transmission in Car - Includes: R & R Oil Cooler,  
Rear Extension Housing and Governor

Combination

A. Rear Pump - Overhaul (.3) . . . . .

Control Valve Assembly

7-330 Control Valve Assembly - SF - Replace (1.0) . . .  
(4.265)

Transmission in Car - Includes: R & R Accumulator  
and Servo Assembly, and Make All Necessary Ad-

Combinations

- A. Manual Valve Body - Overhaul (.3) . . . . .
- B. Shift Valve Body - Overhaul (.3) . . . . .
- C. Coupling Valve Body - Overhaul (.3) . . . . .
- D. Reverse Blocker Body - Overhaul (.1) . . . . .
- E. Throttle and Control Shaft and/or Seals -  
Replace (.4) . . . . .

Oil Seals

7-334 Rear Extension Housing Oil Seal - SF - Replace  
(4.318) (.5) . . . . .

Not Necessary to Remove Transmission

Torus Members

7-328 Torus Members and/or Torus Cover - SF - Re-  
(4.121) place (3.1) . . . . .

Includes: R & R Transmission

Combinations

- A. Torus Check Valve - Replace (.1) . . . . .
- B. Flywheel Rear Housing - Replace (.2) . . . . .
- C. Flywheel Rear Housing Front Seal - Replace  
(.2) . . . . .

Oil Cooler Assembly

7-340 Oil Cooler Assembly - SF - Replace (.6) . . . . .  
(4.128)

7-341 Oil Cooler Lines and/or Adapter - SF - Replace  
(4.128) (.9) . . . . .

7-342 Oil Cooler Water Hose - SF - Replace  
(4.128)

Includes: Drain and Refill Radiator

Each (.5) . . . . .

Both (.7) . . . . .

**DIAGNOSIS AND CORRECTION OF  
ENGINE MISFIRING DUE TO OIL  
IN COMBUSTION CHAMBER**

There are many conditions which cause cylinder head and spark plug problems. Included among these are ignition malfunctions, improperly adjusted or defective valves, carburetor malfunctions, and excessive oil in the combustion chamber.

The correction of a missing condition caused by the ignition, carburetion system or a defective valve is relatively simple and will not be covered in this discussion.

Engine miss due to excessive oil getting into the combustion chamber is uncommon and may be more difficult to correct. Usually it is encountered during periods of low speed and city driving with high manifold vacuum. The misfiring is caused by excessive oil coating the spark plug. The oil on the spark plug is readily visible when the spark plug is removed.

Following is a list of the possible places or paths through which oil could get into the combustion chamber and the suggested tests and corrections for each condition:

1. Intake valve stem seals or shields - Although Pontiac uses tapered valve guides to provide the minimum possible clearance between the valve stem and the valve guide, the seal between the stem of the intake valve and the retainer cup must be in good condition to provide further assurance that oil cannot pass down the valve stem into the combustion chamber. The condition of the seal can be easily checked using the suction cup end of tool J-5751. It is also very important that valve stem shields be installed on all intake valves to prevent excessive splashing of oil against the valve stem.
2. Between outside of valve guide and cylinder head - Some cylinder heads have valve guide holes out of round. This leaves an opening between the valve guide and the cylinder head through which oil can pass. A leak of this nature around an intake valve guide would cause oil to be drawn into the combustion chamber when the valve opens. A similar leak around an exhaust valve guide would allow oil to get into the exhaust passage of the cylinder head and result in excessive smoking.

To test for leakage at this point with the cylinder head in place, remove the valve springs and build a wall of modeling clay or putty around the valve spring seat so that it will form a cavity to retain fluid around the guide. Then fill the cavity with naphtha or similar cleaning fluid. Any loss of fluid indicates a leak and the cylinder head should be replaced until further instructions are issued.

3. Leaks past cylinder head gasket - A loose cylinder head or a defective gasket may allow oil to leak into the cylinders from the oil passages which feed the cylinder head oil galleries. This would be limited to cylinder nos. 5 and 7 of the left bank and 2 and 4 of the right bank.
4. Interconnecting passage between cylinder head oil gallery feed passage (around cylinder head bolt) and intake passage. A leak in this area due to sandhole or crack would leave visible oil in the intake passage of the cylinder head.
5. Piston rings - The replacement of piston rings on a new engine should rarely be needed. Cases of broken or missing rings should be isolated to the specific cylinders involved and corrected without complete ring replacement.

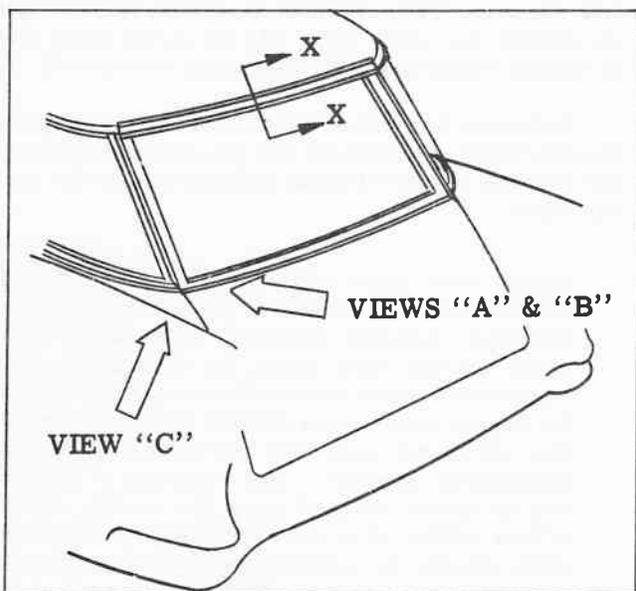


Fig. 4 Safari Lift Gate

### LIFT GATE AND TAIL GATE WATERLEAK CORRECTION 1955 PONTIAC 2564DF "SAFARI"

**NOTE:** This story supersedes information on the same subject appearing on pages 48 and 49 of the May 1955 Service Craftsman News.

Since the May "News" was issued, several changes in the lift gate sealing have been made in production. The following information has been prepared to inform the field of the new parts and of their use in the elimination of possible waterleaks on bodies which do not have a lift gate weatherstrip (body side) retained by a metal retainer.

In present production, the lift gate weatherstrip (body side) is retained by metal retainers across the top and down the sides of the back body opening. Follow-

ing is a procedure for installing a retainer across the top of the back body opening only; the retainers down the sides of the back body opening are not required for this field installation.

#### LIFT GATE (FIG. 4)

To install a metal retainer and the latest type lift gate weatherstrips, the following parts are required:

No. Per Car	Part No.	Description
4	442610	Screw - Molding to Back Body Opening Side Facing
1	4674988	Retainer - Back Body Opening Upper Weatherstrip
13	4666209	Screw - Flat Head #6-32 x 1/4 #4 Head Cross Recess Tapping
1	4673237	Weatherstrip - Lift Gate - Body Side
1	4671318	Weatherstrip - Lift Gate - Gate Side
1	4662654	Weatherstrip - Lift Gate Lower Corner - Right
1	4662655	Weatherstrip - Lift Gate Lower Corner - Left
2	453279	Washer - Finish

1. Remove lift gate from body opening (detach lid from hinge straps).
2. Remove all lift gate weatherstrips (lift gate side and body side) and clean off cementing surfaces.
3. If the rear quarter window lower rear reveal molding has a tab as shown in View "A", Fig. 6, cut tab from molding. Reinstall screw in original hole in lower end of rear quarter window rear reveal molding. If no screw is present, drill hole, seal and install screw (part #442610) to

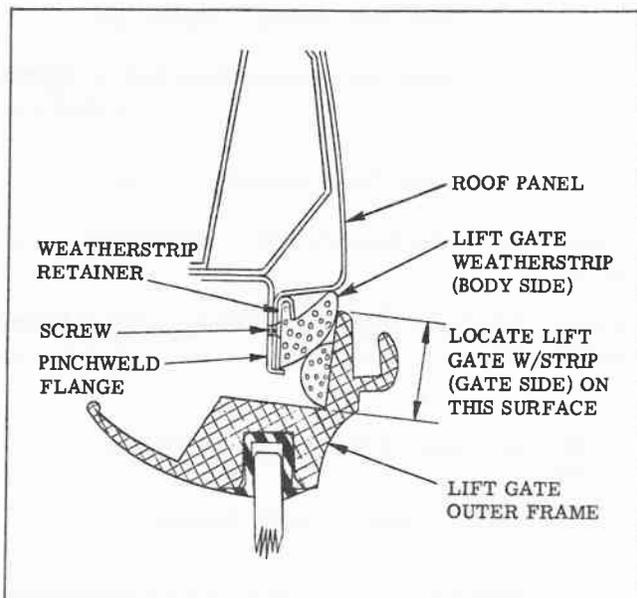


Fig. 5 View Through X-X Fig. 4

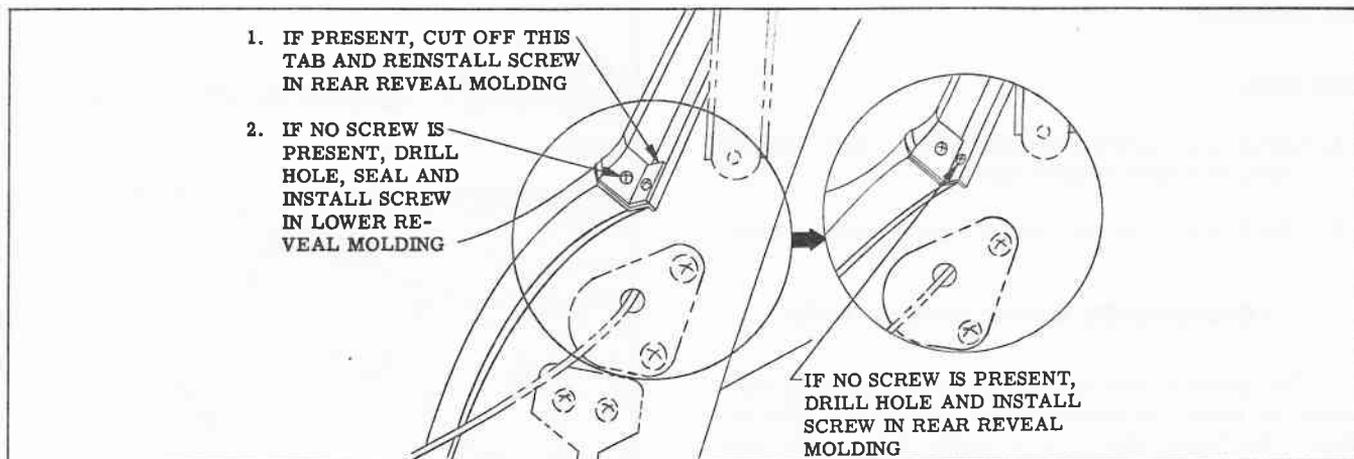


Fig. 6 Views "A" and "B" Fig. 4

rear quarter window lower rear reveal molding to back body pillar rabbet side facing.

4. If the rear quarter window rear reveal molding does not have a tab or screw at the lower end as shown in View "B", Fig. 6 install screw to obtain a better fit.
5. Correct any irregularities in the roof panel-to-back body opening outer rail pinchweld flange and then locate upper weatherstrip retainer along pinchweld flange. See Fig. 5.
6. Mark thirteen (13) hole locations on weatherstrip retainer - two (2) holes 1/2 inch from ends of retainer and eleven (11) holes spaced evenly for the remaining length.
7. Drill a 1/8 inch diameter hole through retainer and pinchweld flange at each hole location. See Fig. 5, for location of retainer. Remove retainer and paint retainer with primer.
8. Apply a wide bead of medium-bodied sealer along pinchweld flange at retainer location.
9. Install retainer with screws (part #4666209). File off ends of screws which protrude through pinchweld flange.
10. Cement new lift gate weatherstrip (body side) in position and crimp upper flange of retainer over weatherstrip as shown in Fig. 5.

**IMPORTANT:** When using weatherstrip cement, carefully follow the directions of the manufacturer to insure a proper bond. Use care when performing crimping operation to avoid distorting retainer or weatherstrip.

11. In addition to cementing lift gate weatherstrip (body side), fasten weatherstrip at point 1/2 inch

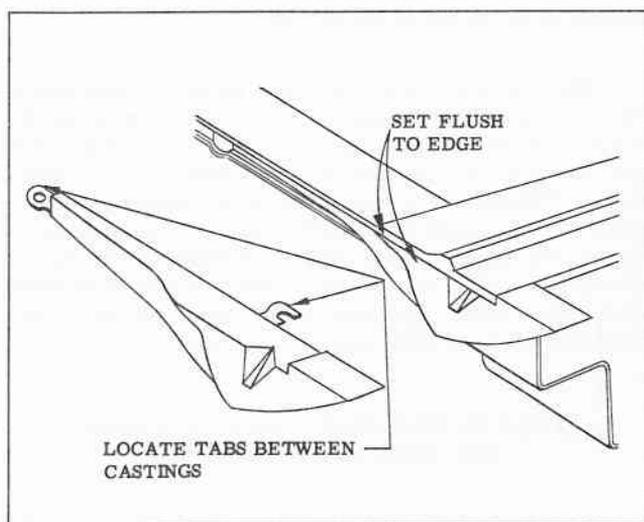


Fig. 7 View "C" Fig. 4

from each lower end (at belt line) with screws (part #442610) and washers (part #453279).

12. Touch up exposed section of retainer with body color paint.
13. Lubricate contact area of weatherstrip with film of silicone rubber lubricant.
14. Install new lift gate upper weatherstrip (gate side) to obtain the required weatherstrip contact as shown in Fig. 5.
15. Install new lift gate lower corner weatherstrips flush with edge of lift gate as shown in Fig. 7.
16. Install and align lift gate to obtain proper spacing and weatherstrip contact at all points. If required contact between lift gate weatherstrip (body side) and lift gate weatherstrip (gate side) is not obtained with lift gate properly aligned, relocate the lift gate weatherstrip (gate side) to obtain required weatherstrip contact. See Fig. 5.

17. Watertest.

**TAIL GATE**

1. Check and correct weatherstrip which may be loose, damaged or misaligned.
2. Check and correct any tail gate misalignment.

**COMPRESSION RATIO 1955 vs 1956**

The question has come up as to what changes were made to raise the compression ratio on the 1956 engine. To begin with, compression ratio is the total volume of the cylinder and cylinder head cavities when the piston is at the bottom of the stroke divided by the volume in the combustion chamber when the piston is at the top of its stroke.

The biggest cause for the higher compression ratio in our 1956 engine was the increase in the diameter of the bore. The decrease in the volume in the combustion chamber was less than 1/4 of a cubic inch. Therefore, it would be of no advantage to install a 1956 head on a 1955 engine in an attempt to raise the compression ratio. Furthermore, due to changes in valve lifters, push rods, rocker arm studs and other parts, cylinder heads must not be interchanged between 1955 and 1956 engines.

**1955 HYDRA-MATIC REAR BEARING OIL SEAL IDENTIFICATION**

Approximately one thousand 1955 Hydra-Matic transmissions were built using a new type rear bearing oil seal. These seals were made with a rubber coating over the outer metal shell and were installed on transmissions in mixed production between transmission serial number 445932 and 447981. In all reports covering rear bearing seal failure on transmissions in the serial number range, please state if the new type seal is involved.

*Charlie Craftsman Says-*



**"Hey! That's not the way to trim the antenna! . . . Read the correct procedure in the October Service News."**

**SERVICE MANAGER—IMPORTANT**

This News contains important service information on Pontiac cars. Each subject should be cross-referenced in the space provided at the end of each section in the Shop Manual or its Supplement. **Be sure and cover every point with your entire organization.**

Each service man should sign in the space below after he has read and understands the information in this issue.
