PACKARD
Service Counselor
PARTS ★ ACCESSORIES ★ PRODUCT ★ PROFITS
INSTITUTIONAL PROMOTIONAL
APPROVED Packard SERVICE

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Packard Servicemen Expected to Attend New Service School in Record Numbers

Record attendance at the latest Packard Serviceman's Training School "Engine Diagnosis and Tune-Up" is expected when Zone School Instructors start their rounds of every U. S. and Canadian Zone with the new school the first week in September.

This is the terminal school in a series of three on Packard tune-up. The first school, "Carburetion", which was quite technical in nature and of appeal primarily to carburetion specialists, attracted over 4,000 Packard Servicemen. Incomplete returns from the second school in the series, "Ignition", show that more than 5,000 Servicemen have attended.

The new school, "Engine Diagnosis and Tune-Up", is expected to shatter earlier attendance records as it is of interest to *every man in the shop* in smaller Dealerships and to all but heavy repair and body specialists in Class A Dealerships.

Like its predecessors, "Engine Diagnosis and Tune-Up" incorporates visual and oral instruction with practical work on Packard units.

A sound-slide film briefly reviews the principles of good carburetion and good ignition and ties them in with the third essential of good engine performance—good compression. It shows step-by-step procedure for analyzing and tuning the Packard engine.

Factory-trained Zone School Instructors will lead and assist the Servicemen who attend in performing the actual work with analyzing equipment on cars.

Each Serviceman who attends will be given a copy of a booklet incorporating all illustrations and narration contained in the slide film in addition to complete specifications and trouble

Packard field men "get the word" on engine analysis from Chief Technical Instructor "Mike" Kollins. Around analyzer, left to right, Kollins; Harold Johnson, Detroit Zone Parts and Service Manager; Howard Langston, Detroit Zone Parts and Service Representative; Harry Mann, Milwaukee Zone Parts and Service Representative. Standing behind group, George Tibbits, Chicago Zone Parts and Service Representative.

shooting on Packard Six, Eight, and Super-Eight Engines.

Zone, Region, and Export personnel will attend the Factory school on this subject August 11 and 12. Under the direction of Service Technical Manager N. A. Lull, the Factory school will be conducted by "Mike" Kollins, Chief Technical Instructor assisted by Walter Nertney and Paul Wesley, of the Service Technical Staff.

Field response to earlier schools in this series has been most gratifying and plans for future schools are now being made under the supervision and guidance of Karl M. Greiner, Parts and Service Manager, and E. D. Longenecker, Assistant Parts and Service Manager.

Field comment on present schools and any suggestions for improving future schools will be greatly appreciated. Address your suggestions or comment to the attention of M. J. Kollins, Service Technical Section, Packard Motor Car Co., Detroit 32, Mich.

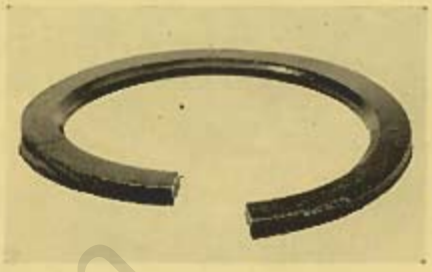
Clipper Front End Strike-Through

You may have occasional reports of Clipper front ends striking through or bottoming when driving over deeply-rutted roads.

You also may encounter cases in which a front spring has sagged to the extent that one side of the car is considerably lower than the opposite side. When this condition exists, it usually is found in cars which have seen a considerable amount of service.

The tendency of front ends to strike through can be substantially reduced by using front spring spacers, part number 326836. This spacer also may be used to equalize front end height in the event one side of the car is lower than the opposite side. Placing one spacer under a front spring will increase the space between the top of the front spring compression bumper and the pad on the bottom of the frame approximately ¼-inch.

It will be necessary to remove the front springs to install these spacers. A one-inch section then should be cut out of the spacer and the spacer bent to the shape of the one shown in the accompanying illustration. Bend the spacer



so that the one end is ½-inch higher than the other end when the spacer is placed on a flat surface. This will form the spacer to the same approximate shape as that of the recess in the spring seat attached to the bottom of the support arm. The spacer then should be installed in the spring seat with the beveled inner edge of the spacer facing downward and the spacer rotated until the lower end is in line with the edge of the drain hole in the spring seat.

Parts and Accessories Department News—

direct from the Packard Factory Warehouse

Long Wheelbase Sedans Trim Samples

21st Series

Material from alternate vendors was used by Henney Motor Company in trimming Packard 21st Series limousines and 7-passenger sedans. To secure matching trim for repair work, it is necessary to send a sample of the material required when ordering for these models.

Cylinder and Piston Assemblies Available

The Cylinder and Piston Assemblies listed below again are available as Service Parts.

Part No.	*Models*
225041	1203-4-5 1403-4-5
304750	120-120A-120B-120BA
317541	115C
317542	120C-120CA-120CD-138CD
348594	1600-1700-1800
348596	1601-1A-1D-2-1701-1A-2-1801-1A
348598	1803-3A-4-5-6-7-8
373714	1951
379283	1900-2000-10-20-30-2100-30
379285	1901-1A-2001-1A-11-21-2101-11
379287	1903-3A-4-5-6-7-8-2003-3A-4-5-6-7-8-23-55-2103-6-26.

Sluggish Overdrive Engagement

Occasionally you may have an Owner report an overdrive unit which does not immediately engage after the accelerator pedal has been released when operating the car at speeds above the governor cut-in speed. The Owner also probably will mention that when the overdrive does engage, it does so with a harsh "clunk".

Sluggish engagement can be expected in cold weather if a car is driven only short distances during which time the overdrive lubricating oil does not reach normal operating temperatures. Cold, thick oil will retard the shift into overdrive and this condition usually clears up as the temperature of the oil rises and the oil thins out.

Another contributing factor toward sluggish engagement is an unusually high engine idle. A high idle slows down the reversal of the direction of rotation of the sun gear and plate when the accelerator pedal is released.

Insufficient Friction

If sluggish engagement exists after the lubricating oil has reached its normal operating temperature and if the engine idle is normal (approximately 450 rpm), the sluggishness may be caused by an insufficient amount of drag or friction between the overdrive stationary gear balk ring and the stationary gear plate. Insufficient friction between these two parts will delay the engagement of the overdrive.

When operating the car at speeds below the governor cut-in speed, the transmission of engine power is through the over-running clutch and tailshaft. At this time the sun gear is free to turn and is rotated by the pinion gears which in turn are being rotated by the ring gear, the clutch sleeve, and the tailshaft. The sun gear and the tailshaft then are rotating at the same speed. As long as the sun gear is free to turn, the overdrive cannot function and the car freewheels when the accelerator pedal is released.

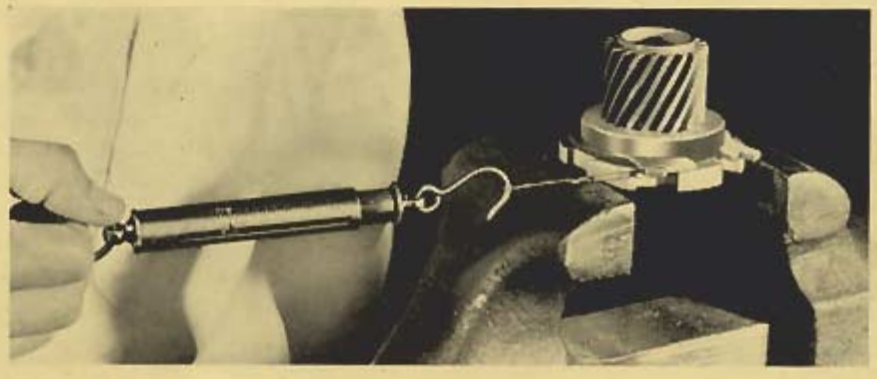
When the car speed reaches the cut-in speed of the governor, the solenoid is energized and the sliding pawl is moved inward toward the sun gear until the pawl comes to rest on the balk ring step where it will remain until the shift into overdrive is completed.

To complete the shift into overdrive, the accelerator pedal is released which causes a reversal of the direction of rotation of the sun gear and plate. The friction or drag of the balk ring on the plate causes the balk ring to turn with the plate and the step of the balk ring slides from under the sliding pawl. The energized solenoid then moves the pawl inward into one of the openings in the stationary gear plate and both the plate and the sun gear are held stationary. Engine power then is transmitted through the planetary gear train and the overdrive is engaged.

Pawl Remains on Step

Insufficient friction between the balk ring and the stationary gear plate will prevent the movement of the balk ring with the plate. The sliding pawl then will remain on the step of the balk ring while the stationary gear plate is rotating with a gradual increase in speed. When the pawl finally is released by the balk ring, the stationary gear plate is rotating too fast for the pawl to enter one of the openings in the plate and the pawl just skips over these openings. When the speed of the stationary gear plate has decreased to a point which will permit the pawl to enter one of the openings in the plate, the plate will be stopped so abruptly that a harsh "clunk" will be felt when the shift into overdrive is completed.

When a new balk ring is installed the tension or torque load should be checked as shown in the accompanying illustration. The stationary gear plate and the balk ring should be lubricated with transmission oil and checked for a torque load of $3\frac{1}{2}$ to 5 pounds with a scale held parallel with



the step of the balk ring. The reading on the scale should be taken while turning the balk ring since the initial effort required to start the ring turning may be considerably higher than the specified torque.

If a balk ring is to be installed in an overdrive which has seen a great deal of service, the gear plate should be checked for being excessively worn or grooved. If the plate is grooved, the stationary gear and plate should be replaced.

The Stationary Gear Balk Ring is part number 367884 and the Stationary Gear and Plate Assembly is part number 371207.

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Loose Air Cleaner Cover Pads

When diagnosing reports of low gas mileage on cars equipped with standard oil coated mesh air cleaners, the felt pad which is cemented to the underside of the air cleaner cover should be checked for security before proceeding with further checks.

A felt pad which has become separated from the cover can very easily cause high fuel consumption as well as poor engine operation.

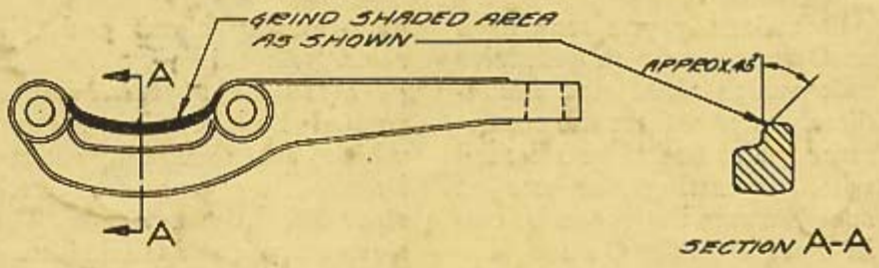
A major contributing factor toward efficient engine operation is the proper fuel-air mixture which enters the intake manifold. If this fuel-air mixture is upset, engine efficiency also is upset.

When a section of the felt pad becomes separated from the cover, the felt is drawn down over the opening in the center of the air cleaner. When this happens, the air passage is restricted and the mixture which enters the intake manifold is overly rich, resulting in excessive fuel consumption.

A restricted opening may not noticeably affect engine operation at low or city driving speeds. However, at higher speeds this condition may become very noticeable since a greater amount of air is required to provide a proper mixture. In fact, a restricted air cleaner opening may upset the mixture to an extent that the car cannot be driven at speeds above 40 or 50 mph. This is especially true if a large portion of the pad is loose and is drawn over the opening.

The air cleaner cover can be removed in a few minutes' time and a check of the felt pad may eliminate further investigation. If the entire pad is not securely cemented to the cover, it should be recemented. A suitable cement is that which is used to repair loose weatherstrips or trunk seals.

Steering Knuckle Lever Interference



Prior to installing a replacement steering knuckle, a steering knuckle lever, or both, a check should be made to determine whether the lever will interfere with the steering knuckle when the lever is in its normal position.

The lever should not contact the steering knuckle at any point other than at the faces of the two retaining bolt hole bosses. Interference at any point may distort the knuckle when the retaining bolt nuts are tightened to their final torque during the reassembly operation.

Distortion of the knuckle will tend to throw the knuckle pin out of alignment and the pin then will bear heavily upon concentrated points in the knuckle pin upper bearing and the lower bushing. This can very easily cause rapid wear in the bearing and bushing which will materially shorten the life of both parts.

The lever may be checked for interference while the steering knuckle is either on the car or on the bench. When the lever is held against the steering knuckle in its normal position, the faces of the bolt hole bosses should be firmly seated against the machined surfaces of the steering knuckle. If a gap exists at either face, or if the lever can be rocked on the steering knuckle, the inner corner of the curved section of the lever and the inner edges of the bolt hole bosses should be ground off as shown in the accompanying illustration.

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