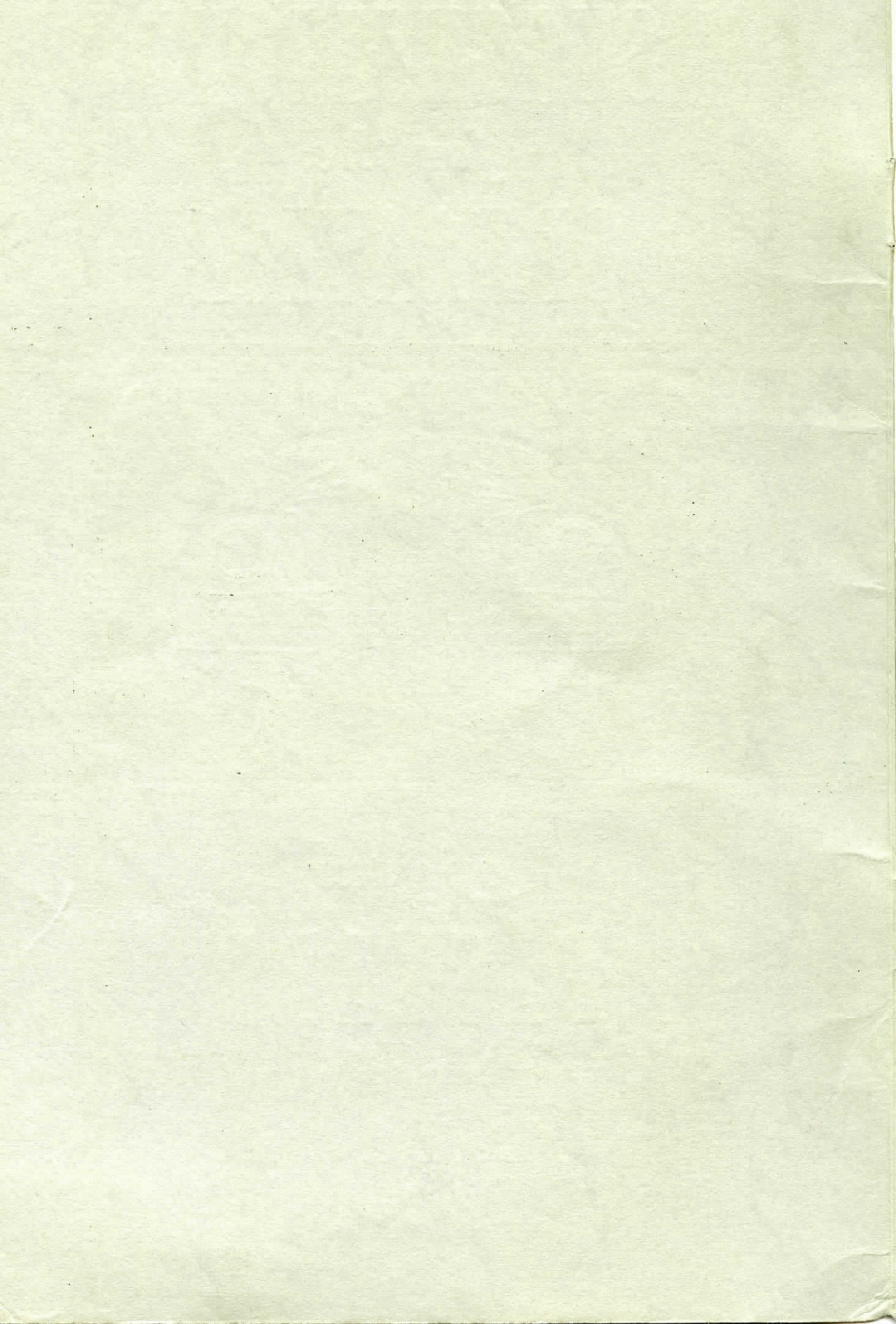


# SUGGESTIONS *for the* OPERATION



*of your*  
PACKARD  
CLIPPER





# PACKARD CLIPPER

We are anxious that you secure the best of service from your Packard car, and welcome your inquiries regarding the car, its operation or maintenance. In writing about your car, please give the engine number. See Page 2 for number location.

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PACKARD MOTOR CAR COMPANY—Detroit, Michigan

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15M-10-41

# License Data

**Engine Number**—The engine number is stamped on the upper left side of the cylinder block between cylinders 3 and 4. It can be read from the left side upon lifting the bonnet.

The serial or vehicle number which is to be used in license and insurance applications and in general reference to the car is stamped on a plate on the left side of the cowl, under the bonnet.

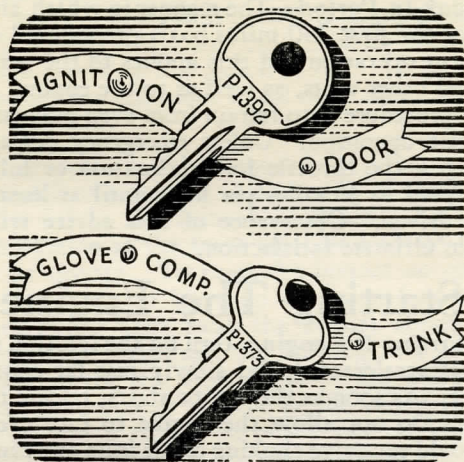
	Six	Eight	Super-8	
Number of Cylinders...	6	8	8	
Bore and stroke.....	3½" x 4¼"	3¼" x 4¼"	3½" x 4⅝"	
Piston displacement....	245 cu. in.	282 cu. in.	356 cu. in.	
AMA Horsepower.....	29.4	33.8	39.2	
Wheelbase.....	120"	120"	127"	
Road weight—			(160)	(180)
Sedan.....	3570	3700	4170	4195
Club Sedan .....	3550	3680	4150	4150
Business Coupe.....	3500	3630		
Shipping weight—				
Sedan.....	3435	3560	4005	4030
Club Sedan .....	3415	3540	3985	4010
Business Coupe.....	3365	3490		

## Capacities and Miscellaneous

Engine crankcase.....	5 qts.	5½ qts.	7 qts.
Transmission.....	2 pts.	2 pts.	2 pts.
Aero-Drive.....	1¼ pts.	1¼ pts.	1¼ pts.
Rear axle.....	5 pts.	5 pts.	6¾ pts.
Cooling system.....	14 qts.	17 qts.	20 qts.
Gasoline tank.....	17 gal.	17 gal.	20 gal.
Over-all width.....	76⅛	76⅛	76⅛
Over-all length.....	208½	208½	215½
Over-all height loaded .	63½	63½	64
Tire size.....	15 x 6:50	15 x 6:50	15 x 7:00
Tire pressure—front....	26	28	28
Tire pressure—rear....	28	28	28
Spark plugs (10 m.m.).....	AC-104 or Champion Y4-A		
Spark plug gap.....	.025" to .030"		



# Locks and Keys



**Locks and Keys**—Maximum protection is provided by the Packard system of locks and keys. Two sets of two keys are furnished with the car. The round handled key operates the front doors and the ignition switch. The other smaller key operates the package compartment and rear trunk locks.

For greater protection against car theft, the lock cylinders are not numbered. Make a record of the key numbers as soon as you take delivery of the car. This will make it possible to easily purchase duplicate keys from your Packard dealer should the keys be lost.

**Door Locks**—The doors are locked by pushing down the small lock buttons in the window moulding. Either the right or left front door may be locked or unlocked from the outside with the ignition key. Key does not release lock plunger button.

Should a lock button be accidentally put in the locked position while the door is open, it will snap to the unlocked position when the door is closed. This feature eliminates the possibility of accidentally locking the keys in the car.

A safety feature particularly appreciated by the parents of small children is that when the rear doors are locked, they can be unlocked only by raising the lock button.

**Never leave your car unlocked when unattended.**

# The Break-In Period

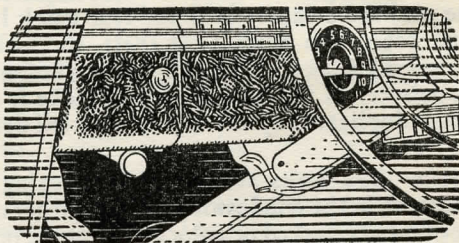
**The Break-In Period**—The manner in which any new car is driven for the *first 250 miles* has a pronounced effect upon its subsequent operation and this applies to the brakes, gears, rear axle and other units, as well as to the engine.

The best procedure is to refrain from even momentary wide-open throttle operation. Unless emergency demands it, do not fully open the throttle for acceleration or hill climbing and limit speed to 50 miles per hour until at least 250 miles have been driven. Observance of this advice will pay big dividends in ultimate satisfaction.

## Starting The Engine

**When starting the engine**, turn on the ignition switch and then depress accelerator pedal slowly just far enough to engage starter. As soon as the engine starts, release the accelerator pedal. Do not allow the engine to race even momentarily. Should excessive choking result from any cause, depress the accelerator pedal slowly to the floor and hold while cranking until the engine starts. Do not allow the engine to race.

**When starting a hot or flooded engine**, depress accelerator to floor and hold until engine starts.



## Everyday Care

**The Right Gasoline**—The Packard engine provides all the benefits of modern high compression design and will operate efficiently on the so-called "regular" grades of gasoline having 72-74 octane ratings. Premium grades of fuel such as "Ethyl" gasoline having an octane rating of 80 or above, may be used. An increase in performance may be expected only if

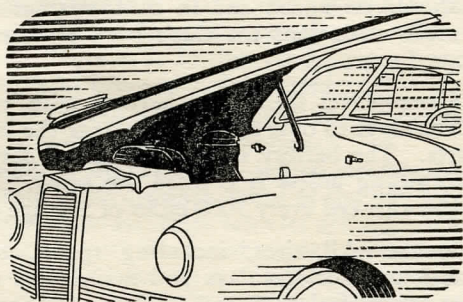


the engine is specially tuned and the ignition advanced to take advantage of the high anti-knock quality of these gasolines.

The gasoline filler cap is located under the hinged lid in the left rear fender. The gasoline tank is fitted with a filling signal which signals while the tank is being filled and stops when the tank is within one gallon of full. To prevent overflowing, instruct the attendant to fill only while the whistle blows.

**Raising the Bonnet**—The bonnet latches are operated by remote control levers located at each side of the front compartment just below the instrument board. An additional safety catch outside at the front must be released before the bonnet can be opened. To raise the bonnet on either side, push the remote control lever on that side forward to the unlocked position. Then raise the bonnet about one inch and insert the fingers through the opening at a point about two feet ahead of the rear edge of the bonnet and release the safety catch. The bonnet is held in the raised position by a special prop which should be raised and the end engaged in the opening provided on the underside of the bonnet.

**Caution:** Always lock the bonnet on both sides before operating the car.



**Engine Oil Level**—In checking the engine oil level between oil changes, there is only one safe rule: Check the oil level every time gasoline is purchased and add oil as required. Even though additional oil will not be required each time, it is better to check the level unnecessarily several times than to risk damaging the engine by missing the one time that more oil is needed.

The mileage intervals for engine oil changes and the correct grade to use depends upon the season of the year and the type of driving, as explained on page 14.

The combination oil filler cap and air cleaner and the bayonet type oil level measuring rod are on the left side of the crankcase. Add oil whenever the level is more than  $\frac{1}{4}$ " below the "Full" mark. Add only enough to bring the level up to the mark.

**Cooling Liquid Level**—The pressure type radiator filler cap is located under the bonnet on the left side for convenience in checking liquid level when checking the oil. The level should be checked at least once every week or ten days, (except on long tours, when it should be checked daily) and kept to within one inch of the top of the filler neck.

**CAUTION**—*When removing the filler cap from a hot engine, rotate the cap toward the left until the stop is reached.* This is the vented position, which allows pressure to escape. Keep in this position until the pressure in the system has been relieved, then turn again to the left to remove. Turn the cap all the way to the right when reinstalling.

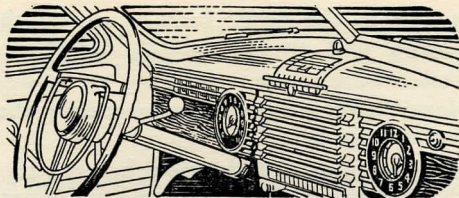
Whenever the cooling system is drained and refilled, rust preventive should be added and in cold weather anti-freeze should be used. Solutions for these purposes are discussed on page 18.

**Battery Care**—Over filling the battery with water may cause the electrolyte to over flow and damage the battery and adjacent parts. The battery in your car has a device which prevents over filling unless it is filled too often. The water level should be checked every 1000 miles of average operation.

**Tire Pressure**—All tires, including spares, should be checked every week or ten days and maintained at the correct pressures as specified on page 2. When touring and covering several hundred miles a day, check the tire pressure every day or two.

Always unlock the rear compartment lid and have the attendant check the spare tire while he is checking the others. Also remind the attendant to reinstall the tire valve caps, which provide an essential service in keeping dirt out and in sealing the valve opening, thus preventing loss of air pressure.





## Controls—Instruments

Comfort and convenience for the driver contribute to greater safety, as well as to more enjoyable driving. The Packard driver's compartment has been designed with this in mind.

*The seat position* is changed by lifting the lever on the left side of the front seat base and sliding the seat backward or forward to the most comfortable position. Changing the seat position occasionally on long trips will be found helpful in avoiding fatigue.

*The rear view mirror* may be adjusted to any angle required for maximum vision. A half-turn raises or lowers it to suit the height of the driver.

*The two-speed windshield wiper* is controlled by a knob on the instrument board above the ash tray. Turning the knob clockwise to the first position starts the wiper operating at full speed. Turning it further to the second position will cause the wiper to operate at slow speed.

**Headlight Switch**—The "Sealed Beam" headlights used on Packard provide two separate beams:

1. A country (upper) beam, which illuminates the road evenly a considerable distance ahead of the car, for use on the open highway when no other vehicles are approaching.
2. A traffic (lower) beam, which is low enough to avoid glare in the eyes of oncoming drivers, for use on city or heavily traveled highways and whenever passing an approaching vehicle.

The headlights are lighted by pulling the light switch on the instrument panel to the second or last position, and selecting the country or the traffic beam as traffic and road conditions demand by depressing the foot switch at the left of the clutch pedal.

A red beam indicator on the left of the speedometer face lights up whenever the country beam is in use to warn the

driver to switch to the traffic beam when another car approaches. Never pass an approaching car with this light burning.

*The parking lights* are turned on by pulling the headlight switch to the first position.

*The instrument panel light switch* regulates the illumination of the instrument panel in three steps when the headlight switch is on. All the way in bright, first position dim, second position light out.

*The map reading light switch*, when pulled out turns on the front compartment map reading light.

*The temperature indicator* shows the temperature of the fluid in the engine. The needle should register at about the center mark except on long, hard drives in summer weather, when it may register "hot." This condition need not cause alarm, as the pressure-operated overflow will normally prevent water losses at temperatures up to 225° F.

*The gasoline gauge* is operated electrically. It indicates the quantity of fuel in the tank only when the ignition is turned on. When the ignition is turned off, the pointer drops beyond the "Empty" mark.

*The battery charge indicator* is not an ammeter and shows only whether the battery is being charged or discharged. The generator is fitted with a regulator which reduces the amount of charge to fit the requirements of the battery. When the battery is fully charged, the indicator will indicate nearly zero.

*The oil pressure gauge* should always show pressure while the engine is running. If it does not, stop the engine at once and investigate the cause. Normal reading should be 30 to 40 on the Six and Eight; 40 to 50 on the Super-8.

*The direction signal lights* supplied as standard equipment on some models and as special equipment on the other models is controlled by a lever on left side of the steering post.

To signal your intention to turn, move the lever in the direction the steering wheel will be rotated when making the turn. The signal lever will automatically return to the off position when the wheels are returned to straight ahead after completing the turn.



Movement of the signal lever illuminates an arrow in the face of the speedometer to indicate the direction of turn being signaled. If an arrow is not illuminated when the lever is moved it indicates that the direction signal is not operating.

**The Aero-Drive** which is supplied as extra equipment, is controlled by the foot accelerator.

**To bring the Aero-Drive into operation**, the car is started and the gears shifted in the normal way. When the car speed has reached the Aero-Drive engaging speed (approximately 22 miles per hour) it will be indicated by the illumination of a green signal light on the right of the speedometer face. The Aero-Drive may now be engaged by momentarily lifting the foot from the accelerator pedal, then returning it and resuming normal driving. The car will remain in Aero-Drive as long as the car speed is maintained above approximately 17 miles per hour.

If when operating in Aero-Drive it is desired to shift back into conventional high gear to obtain quick acceleration for passing another vehicle, it may be done by pushing the accelerator pedal all the way down hard. Then when the foot is momentarily lifted from the accelerator, Aero-Drive will automatically come into operation again.

**To lock out the Aero-Drive**, depress the clutch pedal fully and pull out the lockout knob. This may be done at any speed less than 60 miles per hour but should not be undertaken except when the car is in motion.

**The Electromatic Clutch** which is supplied as special equipment, automatically accomplishes the engagement and disengagement of the clutch normally performed by the driver with a conventional clutch. The car is started, gears shifted and accelerator pedal used in the usual way but without touching the clutch pedal. Even when stopping, it is not necessary to touch the clutch pedal.

**To lock out the Electromatic Clutch** and restore the normal use of the clutch pedal, pull out the switch knob marked Electro Clutch on the instrument board to the right of the speedometer panel. When it is desired to return to Electromatic operation, push in the switch knob.



## Packard Service

**Authorized Service Stations**—We urge you to take your car to Authorized Packard Service Stations for any service work it may require, as Authorized Service Stations are qualified to take care of this work in a manner that cannot be duplicated elsewhere.

They have the obvious advantages of specialized instruction and experience on Packard cars, of the use of Packard Guaranteed Precision Built Parts, and of adequate tools and equipment. Their workmen, too, secure the benefits of continuous training on up-to-date servicing methods by means of regular publications and special bulletins supplied exclusively to them by the Packard factory.

Furthermore, it is well known that keeping owners well satisfied with their cars will mean future car sales to Authorized Packard Dealers. For this reason alone, no one else will have as great an interest in keeping your car performing at its best at the lowest maintenance cost possible.

**Owner Service Policy**—When you took delivery of your car you received a "Packard Owner's Card," which we ask you to read carefully at this time, if you have not already done so.

You will note from your card that you are entitled to a number of privileges, including: Two free inspection and



adjustments as indicated on the coupons attached to the card; replacement without charge of any parts adjudged by this company to be defective under its Warranty; and free inspections at any time, provided no disassembly of parts is required.

You are also entitled, when touring, to the same Warranty Service from any Authorized Packard Service Station as you would receive from the service station of the dealer who sold the car, by merely presenting your Packard Owner's Service Card, which should have been properly filled out by your dealer and delivered with your new car. This card should be signed as soon as it is received and carried in the car.

**Manufacturer's Warranty**—All Packard cars are sold subject to the following Manufacturer's Warranty:

Packard Motor Car Company has warranted that for a period of ninety days from the date of original delivery to the purchaser of each new Packard car or before such car has been driven 4,000 miles, whichever event shall first occur, it will replace, free of charge, any part or parts thereof, including all equipment or trade accessories, except tires, supplied by it as standard equipment, claimed within that period to be defective and found by the Company upon examination to be so, provided such part or parts are returned to the Company within that period for credit or replacement. Such free replacement does not include transportation charges to or from the Packard factory.

This warranty shall not apply to any vehicle which shall have been repaired or altered outside of an Authorized Packard Service Station in any way so as in the judgment of the Manufacturer to affect its stability and reliability, nor which has been subject to misuse, neglect or accident.

**Tire Warranty**—All tires supplied as original equipment carry the following tire manufacturer's warranty:

"Every tire of our manufacture, bearing our name and serial number, is guaranteed by us to be free from defects in workmanship and material, without limit as to time or mileage, and to give satisfactory service under normal operation conditions.

"If our examination shows that any tire has failed under the terms of this guarantee, we will either repair the tire or make an allowance on the purchase of a new tire."

**Support Arms  
Upper and Lower**

10 connectors,  
pressure gun grease

**Steering Rods  
and Knuckles**

7 connectors,  
pressure gun grease

**Generator and  
Starter**

3 oilers, S.A.E. 30  
engine oil

**Gear Sh  
Lever S**

1 connec  
pressure gun

1000 M

**Front Wheel  
Bearings**

No. 3 Fibre Grease  
Repack every  
10,000 miles

**Engine Oil**

Change 1,000-  
2,000 miles  
See page 14

**Steering Gear**

Straight  
transmission oil  
Maintain level

**Transm  
and Aer**

Straight  
transmission oil  
refill in the  
See page



**Shifter  
or Shaft**

connector,  
gun grease

**Distributor**

1 cup, No. 3  
cup grease

**Clutch and  
Brake Pedal  
Shaft**

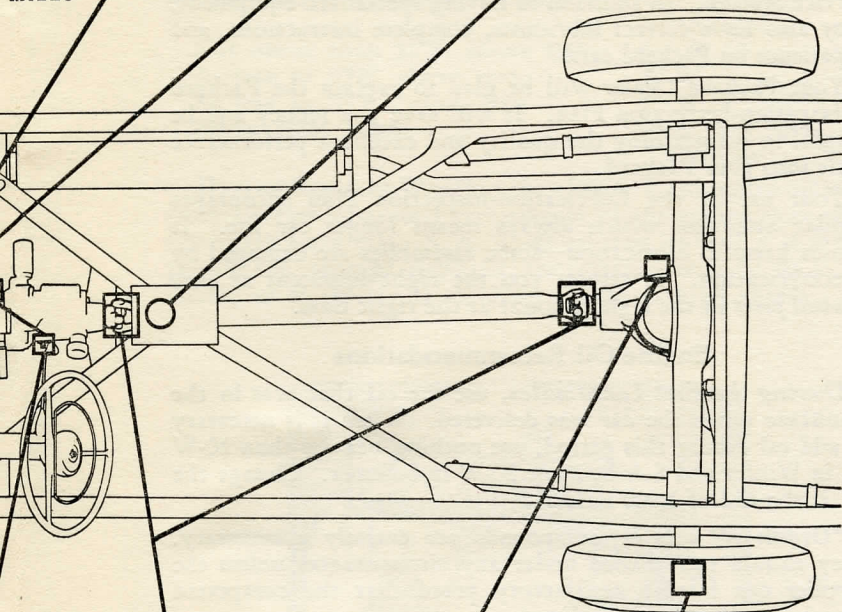
1 connector,  
pressure gun grease

**Universal  
Joint Spline**

(Aero-Drive only)

1 connector,  
pressure gun grease

**MILES**



**Transmission  
Aero-Drive**

at transmis-  
—Drain and  
the Spring  
page 17

**Universal Joints**

Pressure gun grease  
Repack every  
30,000 miles

**Rear Axle**

Approved Passenger  
Car Grade Hypoid  
Gear Oil—Drain  
and refill in the Fall  
See page 17

**Rear Wheel  
Bearings**

No. 3 Fibre Grease  
Repack every  
30,000 miles

# Lubrication

In order that your Packard car may deliver throughout its life the performance built into it, we urge you to protect your investment by having the car lubricated regularly as recommended.

**Authorized Lubrication**—Lubrication operations can be performed most satisfactorily by your Authorized Packard Service Station. In addition to having specialized equipment, they also have correct lubricants, complete instructions, and experience on Packard cars.

Your Packard Dealer will be glad to explain the Packard Lubrication-Inspection Plan. It will save you money and be helpful in maintaining the quality and excellent performance built into your Packard.

Your use of the Lubrication-Inspection Plan encourages regular attention which always means longer car life. It avoids harmful lubrication—some assemblies are damaged by overlubrication. It assures you the right lubricant at *every required point* in the right amount at the right time.

## Engine Oil Recommendations

*During the first 1,000 miles*, use the oil that was in the crankcase when the car was delivered. When it is necessary to add oil during this period, use nothing heavier than 10-W oil in Winter and S.A.E. 20 or 20-W in Summer. Change the oil at the end of 1,000 miles.

**"Break-in" oils** or compounds are entirely unnecessary. They should not be used under any circumstances unless the supplier can furnish satisfactory proof that the compound contains no harmful ingredients.

*After the first 1,000 miles*, the crankcase oil should be selected to give the best performance under your individual climatic and driving conditions.

*During cold weather*, an oil should be used that will permit easy starting at the lowest atmospheric temperature that is likely to be encountered.

When the engine crankcase is being refilled, the engine oil should be selected, not on the basis of atmospheric temperature existing at the time of the change, but on the anticipated



minimum temperature for the entire period during which the oil is to be used. Unless the selection is made on this basis, difficulty in starting may be experienced at each sudden drop in temperature.

The viscosity grades of engine oil for use in your Packard car at the various cold weather temperatures are given in the chart below:

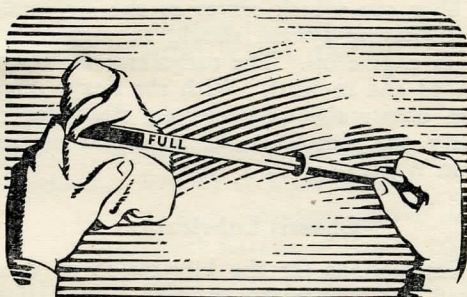
If you anticipate that the minimum atmospheric temperature will be:

Not lower than 32°F. above zero  
As low as 10°F. above zero  
As low as 10°F. below zero  
Below 10°F. below zero

Use the grade indicated:

S.A.E. 30  
20-W  
10-W  
10-W plus 10%  
kerosene

*During Summer Weather* use of S. A. E. 30 engine oil will permit better all-around performance of the engine than will the heavy body oils. S. A. E. 40 oil may be used if it is expected the average daylight temperature will be 90°F. or above, or if the car is regularly driven at high speeds.



**Maintaining Oil Level**—Check the oil level every time gasoline is purchased and add oil as necessary. The oil measuring rod is marked "Full;" add oil whenever the level falls  $\frac{1}{4}$ " below the full mark but do not add above the full mark. Always be sure to have the right amount before starting on a long drive.

**Changing Crankcase Oil**—*Under normal driving conditions, draining the crankcase and replacing with fresh oil every 1,000 to 2,000 miles is recommended.*

Under adverse driving conditions, it may become necessary to drain the crankcase oil more frequently. These conditions would include:

Driving through dust storms or on extremely dusty roads may contaminate the engine oil in spite of the engine air cleaners.

During cold weather, frequent starts and short runs may contaminate the oil with water condensation inside the crankcase.

Hard driving tends to thicken oils and this may interfere with easy starting in cold weather.

Drain the crankcase only after the engine has been heated to normal operating temperature. The benefit of draining is, to a large extent, lost if the crankcase is drained when the engine is cold, as some suspended foreign matter will cling to the sides of the oil pan and will not drain out readily with the slower moving cold oil.

Whenever the crankcase oil is changed, the copper gauze in the oil filler cap which serves as the air intake for the crankcase ventilating system should be cleaned in gasoline and dipped in engine oil. The carburetor air cleaner should also be cleaned and re-oiled. With the heavy duty oil bath type cleaner, empty the oil reservoir, clean and refill with approximately one pint S. A. E. 50 engine oil in Summer, S. A. E. 30 in Winter.

## Chassis Lubrication

Detailed instructions for the lubrication of your Packard car are listed and illustrated in the "Lubrication Chart." The chassis requires attention every 1,000 miles, and all chassis lubricating points should be given attention at these times.

**Lubricants**—The rear axle of your car is equipped with a hypoid gear and pinion, and it must be lubricated with S. A. E. 90 Passenger Car Duty Hypoid Lubricant. See your Packard dealer for list of approved lubricants.



The lubricant level should be inspected every 1,000 miles and approved Hypoid Lubricant added if required. The axle should be drained, and refilled with fresh Hypoid Lubricant with the approach of cold weather each fall.

S. A. E. 80 Passenger Car Duty Hypoid Lubricant should be used in localities where the temperature drops 10° or more below zero for long periods.

The transmission and Aero-Drive should be lubricated with a high grade straight transmission oil of S. A. E. 140 viscosity in warm weather and S. A. E. 90 in cold weather or S. A. E. 80 in extreme cold weather.

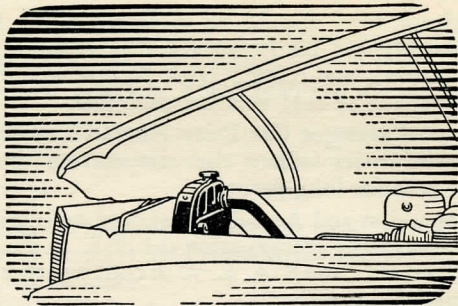
The lubricant level should be inspected every 1,000 miles and lubricant added as required. The transmission should be drained and refilled with fresh lubricant once each year, preferably in the Spring.

The steering gear, wheel bearings, and grease gun connections as well as the transmission and differential each require a specific type of lubricant. Only operators familiar with these requirements and having the right materials should be permitted to lubricate the car.

## Other Operations

There are several additional items of lubrication and maintenance regularly required which are listed here for your convenience:

- Front wheels.....Repack every 10,000 miles
- Rear wheels.....Repack at 30,000 miles
- Universal joints...Repack at 30,000 miles
- Oil filter.....Renew cartridge 8,000 to 10,000 miles
- Brakes.....Check fluid level every 6,000 miles
- Cooling system...Flush twice a year—Spring and Fall
- Gasoline lines and  
strainers.....Clean out twice a year—Spring and Fall
- Engine oil pan...Remove and clean once a year
- Tires.....Cross switch the wheels and tires as  
illustrated on page 20 every 2000 to  
5000 miles to equalize tread wear and  
increase tire life.



## Cooling System

The attention required by the cooling system consists of keeping it filled to the correct level, one inch below the top of the filler neck, with the proper fluid, keeping all connections tight to insure a leak-proof system, and cleaning the system thoroughly at regular intervals.

When draining the cooling system for cleaning or other purposes, first run the engine until it is warm, then stop it and open the two drain plugs. One drain plug is located on the left side of the cylinder block near the starter and one on the front face of the lower radiator tank. Both must be open to drain the engine completely.

**Cooling System Inhibitor**—When your car was delivered to you, the cooling system contained one-half pint of Packard Rust Preventive, a special chemical that retards the formation of rust and scale. A fresh supply of this inhibitor should be added whenever the system is drained and refilled with water.

**Anti-Freeze**—When installing anti-freeze solutions, the quantity should be determined by the anti-freeze manufacturer's recommendation based on the cooling system capacity. Refer to page 2 for capacities.

Among the anti-freeze compounds that have been found satisfactory are those made from ethylene glycol such as "Prestone" brand anti-freeze, denatured ethyl alcohol (or ethanol) and methyl or wood alcohol (or methanol) prepared by reputable manufacturers and treated by them to reduce



the rust forming properties of water. No inhibitor or treatment should be added to an anti-freeze that already contains an inhibitor.

Kerosene or other oils, or solutions containing calcium chloride, magnesium chloride, sodium silicate or other inorganic salts, honey, glucose or sugar are not satisfactory for use in the cooling system.

Before installing anti-freeze solution, the cooling system should be inspected and serviced for Winter operation. The system should be thoroughly cleaned and all loose scale and iron rust removed.

Cylinder head gaskets should be tightened, or replaced if necessary, to avoid the possibility of anti-freeze solutions leaking into the engine or exhaust gas blowing into the cooling system. Anti-freeze, or water, mixed with engine oil may form sludge, which will interfere with lubrication, and in some cases, may form varnish-like deposits which will cause gumming and sticking of the moving parts.

The water pump seal and radiator hoses must be leak-tight, not only to avoid loss of liquid, but to prevent air from being drawn into the cooling system. Aeration of the cooling liquid causes foaming and promotes oxidation which may result in serious corrosion.

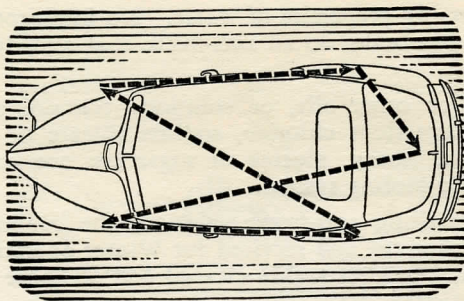
After the anti-freeze solution has been installed, the entire system, including the hose connections, cylinder head gasket and pump, should be inspected regularly to insure that no leaks have developed.

Anti-freeze, or water, or both may be lost from the cooling system through leaks, evaporation, boiling, foaming, or expansion.

The use of the pressure radiator cap on Packard cars serves to increase the boiling point of the anti-freeze solution and reduces the probability of loss through evaporation or boiling.

Loss by expansion is a result of overfilling. In the average cooling system, the anti-freeze solution expands approximately 2 pints on heating from 30 to 160°F., and a corresponding space should be left when adding liquid to the radiator.

A hydrometer test will indicate whether anti-freeze, or water, or both should be added to bring the solution to the proper level and to maintain the desired freezing point.



## Wheels and Tires

Maintaining correct tire pressure at all times is most important if maximum tire life is to be obtained. Standard tire sizes and correct inflation pressures are listed in the table on page 2. Testing should be done in accordance with the recommendations given on page 6.

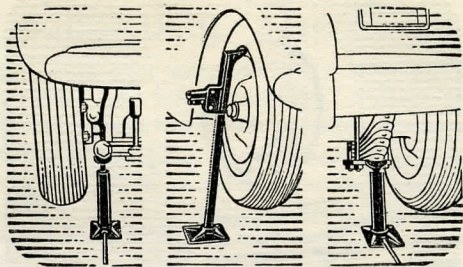
**Interchanging Tires**—Cross switching tires at regular intervals of from 2,000 to 5,000 miles greatly increases their useful life by subjecting them equally to the various types of wear.

The Packard recommended system is illustrated in the sketch. Ask your Packard Serviceman about putting your tires on this schedule.

**Changing Wheels**—Emergency wheel changing in case of a flat tire is most easily accomplished by observing the following procedure exactly:

If a rear wheel is to be changed, and the car is fitted with wheel shields, the shield is removed by reaching up under the shield at the rear, grasping the handle of the tightening lever and pulling the handle inward to clear the flange and then down and forward. The shield will then drop outward at the top and can be lifted clear of the fender brackets at each end.





Make sure the hand brake is set.

Remove the hub cap, using flattened end of combination wheel wrench and jack handle as a pry.

Loosen the wheel mounting nuts not more than a turn or two.

Assemble jack to its base and place the jack next to the wheel, with the short side of base as close as possible to the tire and with jack head under center of the wheel rim flange.

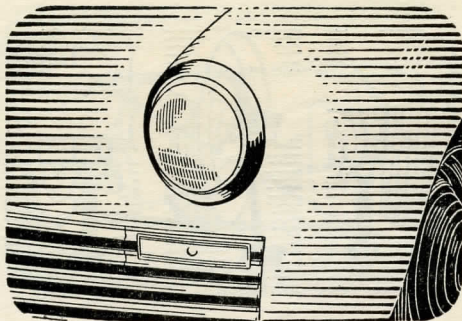
Raise the wheel until the jack stand can be slid into place. The top of the stand should be placed under the rear spring close to the axle housing as shown in the drawing.

Lower the jack until weight of car rests on the stand, take the jack away and remove wheel in customary fashion.

Installing the spare wheel is performed by reversing the foregoing operations.

To install the wheel shield, engage the projecting lugs at the lower corners of the shield into their respective fender brackets, and making sure the tightening lever handle points straight down, push the upper part of the shield in place. Then move the handle of the tightening lever back and up, locking it behind the lower flange of the shield.

Changing a front wheel is performed in the same manner except no wheel shields are used, and the jack stand is placed with the step of the stand under the lower support arm, as shown in the drawing.



## Headlight Care

The only service required by "Sealed Beam" headlights includes wiping off lenses, checking aim periodically, and replacing the unit in cases of burnt out filaments or damage.

No dust or moisture can get inside the "Sealed Beam" headlight unit because the reflector and lens are sealed together permanently. This feature eliminates cleaning, except for wiping off the outside of the lens, and provides proper focusing and maximum light efficiency.

**Aiming Headlights**—We recommend taking the car to an Authorized Packard Service Station every six months to have the aim of the headlights checked and corrected, if necessary.

Proper headlight aiming is done best with precision headlight testing equipment, although a properly marked aiming screen, is satisfactory.

<i>Light Bulbs</i>	<i>Candlepower</i>	<i>Mazda</i>	<i>Per Car</i>	<i>Contact</i>
Headlight.....	40-30 watts	Sealed Beam	2	Three
Dome Light.....	6	82	1	Double
Stop & Tail Light.....	21-3	1154	2	Double
License Plate Light.....	3	63	1	Single
Courtesy Light.....	6	82	2	Single
Glove Compartment Light....	1	51	1	Single
Clock Light, Map Light.....	2	55	2	Single
Speedometer Pointer Light....	2	55	1	Single
Instrument Board Panel Light..	2	55	2	Single
Headlight Beam Indicator Light	1	51	1	Single
Parking & Direction Signal ...	21-3	1154	2	Double
Aero-Drive Indicator Light....	2	55	1	Single
Direction Signal Indicator.....	2	55	2	Single
Direction Signal Rear Lights...	21	....	2	Single



# Cleaning The Car

**Washing**—Fine dust may be safely removed by dusting with a soft clean cloth but "scrubbing" a dirty car with dry cloths is almost certain to scratch polished surfaces.

Clean the car by washing with plenty of cold or lukewarm water. Soak the dirt off as much as possible and rinse sponges frequently to remove grit and dirt. Dry with a clean chamois. Avoid washing the car in the sun or at any time when the lacquered surfaces are hot. Never use hot water.

In sections where salt, calcium chloride or similar chemicals are used on the roads, frequent washing of the car is necessary to preserve the finish. Where cars are to be exposed to freezing temperatures immediately after washing, all water must be removed from the edges of the adjustable windows and doors to prevent sticking due to the formation of ice.

**Polishing**—A high luster can be restored by a thorough cleaning with Packard Body Polish or any other properly formulated body polish. The presence of color on the rubbing cloths simply indicates the removal of chalked or dead surface pigment loosened by exposure. All body striping is applied on top of the lacquer and requires careful treatment. Prolonged, vigorous rubbing will damage or even remove it.

Any lacquered surface upon which alcohol solutions have been spilled should immediately be flushed with water.

**Glass**—Plate glass although hard can quite easily be scratched. Cleaning a dirty windshield when dry by operation of the wiper blade or with dry cloths is apt to cause minute surface scratches that will increase eye strain. Wet or moisten glass before cleaning.

**Chromium Plating**—Among the more common elements that attack chromium plating are: sulphur dioxide present in the air, especially in large industrial centers, calcium chloride used on city streets to melt ice and on dirt roads to prevent dust, also the salt air of coastal territories. When plating is scratched or scuffed to the base metal, ordinary moisture becomes a damaging agent. Rust, originating at the root of a scratch, will continue to spread *underneath* the plating unless attended to when it first appears.

First, go over all plated surfaces with a clean cloth moistened with kerosene, follow this with a clean cloth wet with clear

water and then rub dry with a soft clean cloth. The rough treatment given car bumpers is apt to damage the plating. Should rust appear, use a mild scouring compound to remove every trace of rust and prevent further oxidation by applying a coat of wax, varnish or clear lacquer over the damaged area.

**Upholstery**—Where the use of cleaning fluid is indicated, use Packard Fabric Cleaner or a cleaning fluid in which carbon tetrachloride is the principal ingredient. To avoid rings, work from the outside toward the center.

**Battery Acids**—These destroy upholstery if allowed to remain. Neutralize the acids as soon as possible by pouring enough household ammonia water directly on the spot to saturate the fabric as far as the acid extends. Give the ammonia water a full minute to neutralize the acid and then rinse the fabric with a wet cloth. Use cold water.

**Blood Stains**—Rub with a clean cloth wet with cold water.

**Candy or Fruit**—Stains should be rubbed with a clean cloth wet with very hot water. If chocolate is present in the candy stain, use lukewarm water. After drying, sponge with a clean cloth wet with cleaning fluid.

**Gum**—Moisten with cleaning fluid, remove with dull knife.

**Ice Cream**—Rub with a clean cloth wet with very hot water. If this is not satisfactory, use a cloth wet with warm soap suds and rinse with a cloth wet with cold water. After drying, sponge with cleaning fluid.

**Lipstick**—Pour cleaning fluid directly on spot and immediately hold a clean blotter on stain. Repeat until clean.

**Shoe Polish**—For black or tan polish, use a cloth wet with cleaning fluid. If white polish cannot be brushed off, wet with cold water, allow it to dry and then brush off.

**Grease or Oil**—Small spots should be rubbed with a cloth wet with cleaning fluid. Pour cleaning fluid on large spots and blot with clean blotters.

**Tar**—Moisten with cleaning fluid and remove with dull knife. Sponge with cloth wet with cleaning fluid.

**Paints and Lacquers**—Rub with a cloth wet with turpentine and then sponge with a cloth wet with cold water.

**Water Spots**—Sponge the entire panel with a cloth dampened with cold water then sponge the spots with a cloth moistened with cleaning fluid.



