

# SECTION XX

## LUBRICATION

Thorough lubrication and preventive maintenance are necessary for continued peak performance in the present day automobiles.

The moving parts in Packard and Clipper cars are fitted so precisely that they are able to withstand the load and speed of today's driving conditions for long periods of operations. Therefore, it is important that the Packard servicemen follow the factory lubrication recommendations and specifications.

The following recommendations are presented as an aid to proper lubrication.

### Types of Engine Oil

Different types of engine oil are made to meet the various needs of everyday driving.

These are defined as follows:

The "Premium" or "MM" type designates the engine oil having the oxidation stability and bearing corrosion preventive properties necessary to make it generally suitable for internal combustion engines under normal driving conditions, such as low and medium speed driving with only an occasional long trip at high speed.

The "Heavy Duty" or "MS" type designates the engine oil having a higher oxidation stability and bearing corrosion preventive properties necessary to make it generally suitable for internal combustion engines under severe driving conditions for a greater percentage of the time such as in mountain climbing and at sustained high speeds.

Both types of engine oil are available in several grades.

### Selecting Engine Oil

During the first 500 miles, use the oil that was in the engine when the car was delivered. If it is necessary to add oil during this period, use nothing heavier than SAE 10-W oil in cold weather and SAE 20 or 20-W in warm weather.

After the first 500 miles, the oil should be drained and replaced with a grade of oil suitable for the different driving and climatic conditions.

During warm weather, use SAE 20 engine oil; however, if the car is regularly driven at high speeds, or if the average daylight temperature is above 90° F, use SAE 30 oil.

The "Oil Grade and Temperature Chart" lists the oil grades to use during cold weather.

### OIL GRADE AND TEMPERATURE CHART

IF THE ANTICIPATED MINIMUM ATMOSPHERIC TEMPERATURE WILL BE:	USE THE GRADE INDICATED:
Not lower than 32° F. above zero..	SAE 20 or 20-W
As low as 10° F. above zero.....	20-W
As low as 10° F. below zero.....	10-W
Below 10° F. below zero.....	5-W

### Engine Oil Level

The engine oil level should be checked every time gasoline is purchased. Two level marks are stamped on the dip stick, one marked "Low" and the other marked "Full."

The oil level should be maintained between these marks. Never permit the oil level to get below the "Low" mark, and, when necessary, add only enough oil to bring the level up to the "Full" mark. Always check the oil level before starting on a long drive.

### Changing Engine Oil

After the first oil change, it is recommended that the engine oil be changed every 2000 miles, thereafter, if the car is operated under normal driving and climatic conditions. However, it may be necessary to change the oil more frequently if the following conditions prevail:

- Dust:** When driving through dust storms or on dusty roads, the dust may get into the engine oil in spite of the engine air cleaners.
- Cold Weather:** Frequent starts and short runs in cold weather do not permit the engine to warm up thoroughly and water may get into the oil from condensation of crankcase vapors.
- Hard Driving:** Hard driving and heat tend to cause oxidation and break down the lubrication qualities of the oil.

### Air Cleaners

The mesh in the combination oil filler cap and air cleaner should be cleaned and reoiled each time the engine oil is changed. Clean the mesh by swishing the filler cap in gasoline, shake dry, and then dip it in clean engine oil.

The heavy duty carburetor oil bath air cleaner oil should be changed and the oil reservoir cleaned every 5000 miles or oftener if driving conditions warrant. Fill to the oil level mark on the air cleaner, using SAE 50 engine oil in warm weather and SAE 20 in cold weather.

The air filter element on the Easamatic brake power unit should be replaced every 10,000 miles.



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## Engine Oil Filter

The oil filter used on Packard and Clipper cars is the by-pass replaceable element type. It is connected in such a manner that clogging of the filter element will not stop the flow of oil to the engine bearings; however, when the filter element becomes clogged, it fails to filter the oil.

With the use of today's highly detergent lubricating oils, the sludge and foreign impurities are held in suspension which permits the filtering element to remove a greater amount of these impurities. Therefore, it is recommended that the oil filter element be replaced with a new one every 4000 miles to coincide with every second engine oil change.

## Power Steering

The fluid in the reservoir should be checked after the first 1000 miles of driving and every 5000 miles thereafter. The oil level should be maintained to the "Full" mark.

Packard Twin Ultramatic Transmission fluid should be used for the power steering hydraulic system or if not available, use any "A" type automatic transmission fluid which has an AQ-AFT number embossed on top of the can.

## Rear Axle

The rear axle is to be lubricated with SAE 90 Multi-Purpose Gear Lubricant. SAE 80 Multi-Purpose Gear Lubricant should be used where the temperature drops to 10 degrees or more below zero for long periods of time.

The rear axle should be drained and refilled with fresh Multi-Purpose Gear Lubricant each fall with the approach of cold weather.

## Transmission and Overdrive

The transmission and the overdrive is to be lubricated with a Multi-Purpose Gear Oil of SAE 90 viscosity. If difficulty in gear shifting is experienced during cold weather, use SAE 80 Multi-Purpose Gear Oil.

The oil should be drained and replaced with fresh oil each spring.

## Twin Ultramatic Transmission

The Twin Ultramatic Transmission fluid level should be checked every 1000 miles and, if necessary, fluid added to maintain the level at the full mark on the dip stick.

Every 25,000 miles the unit should be drained, oil screen and pan cleaned, and the unit refilled with new fluid.

Packard Twin Ultramatic Transmission fluid should be used or any type "A" automatic transmission fluid which has an AQ-AFT number embossed on the top of the can may be used.

## Torsion Level Suspension

The ten lubrication fittings on the Torsion Level Suspension should be lubricated with a pressure gun grease every 1000 miles.

The load arm links are lubricated with a special grease when assembled and require no further attention unless the links are removed.

The compensator is filled with a special grease and requires no periodic changes.

If the compensator is disassembled, it can be refilled with lubricant by removing a 1/8" pipe plug from the bottom of the lower housing and installing a grease fitting in the opening.

Using a grease gun filled with 1 lb. of special lubricant Part No. 474028, fill the compensator until grease comes out of the small vent fitting on the left side of the upper housing near the worm shaft. Remove the grease fitting and reinstall the 1/8" pipe plug.

If the load arm links are removed, fill the cavities in the grease retainers at the ends of the links with the special lubricant Part No. 474028.

## Universal Joints

Cars equipped with the Twin Ultramatic Transmission use a propeller shaft with a ball and trunnion type front universal joint and a cross type rear universal joint. These joints require repacking with a heavy fiber universal joint grease having E.P. properties every 15,000 miles.

Cars equipped with the manual shift transmission use a propeller shaft having lubrication fittings, these should be lubricated with SAE 140 gear oil every 1000 miles. Chassis lubricant should *never* be used in these joints.

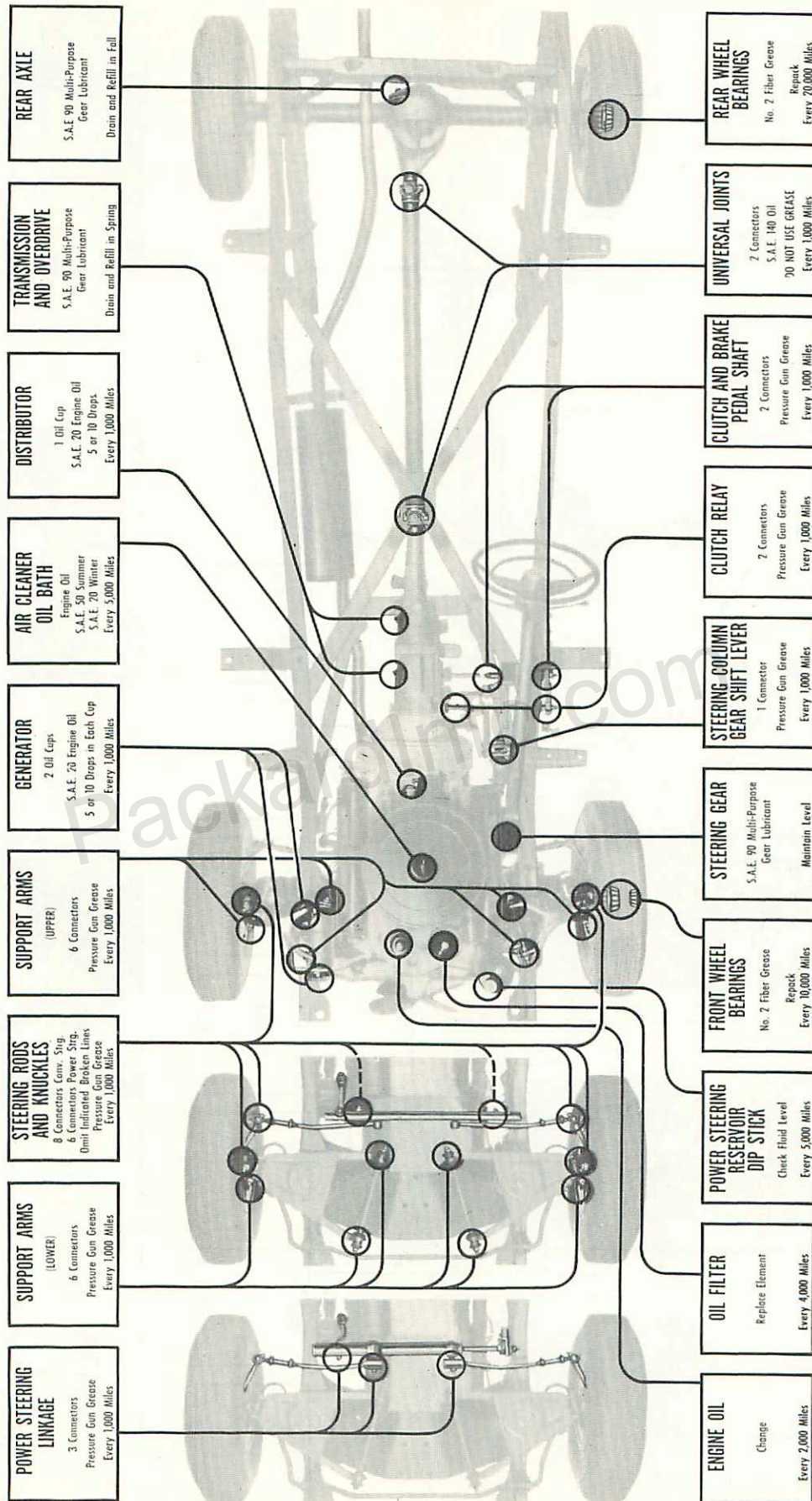
## Lubrication Charts

The lubrication chart (Fig. 1) illustrates and explains briefly, each of the various points of lubrication on the Clipper Deluxe-5522, Clipper Super-5542, 47, Clipper Custom-5562, 67 when equipped with Standard Transmission or Overdrive with or without Power Steering.

The lubrication chart (Fig. 2) illustrates the various points of lubrication on the Clipper Deluxe-5522, Clipper Super-5542, 47 when equipped with Twin Ultramatic Transmission and the Clipper Custom-5562, 67 Packard-5582, 87, 88 when equipped with Twin Ultramatic, Torsion Level Suspension and with or without Power Steering.



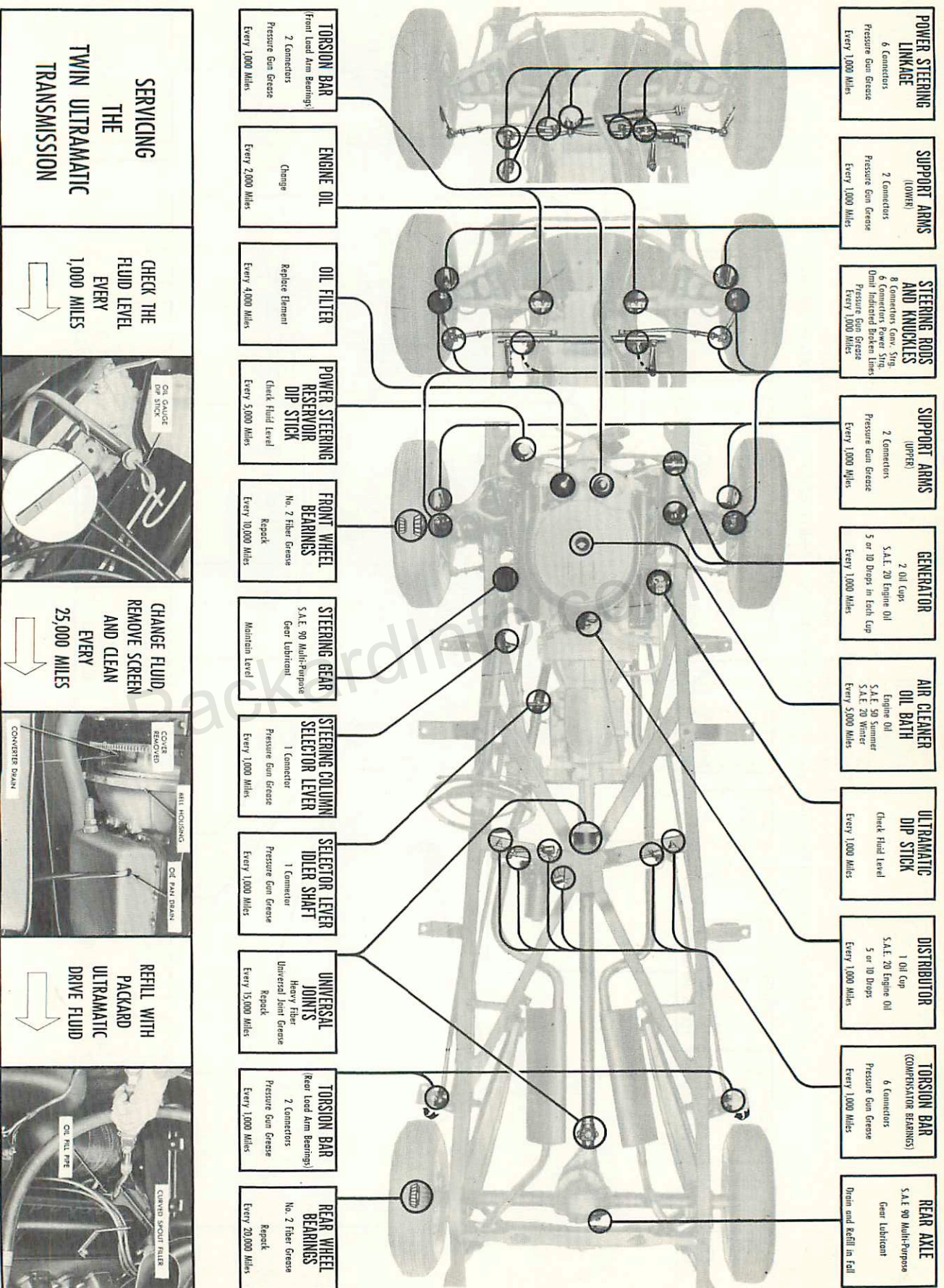
# LUBRICATION



CLIPPER DELUXE—5522, CLIPPER SUPER—5542-47, Equipped with STD. TRANSMISSION or OVERDRIVE  
CLIPPER CUSTOM—5562-67, Equipped with STD. TRANSMISSION or OVERDRIVE  
With or Without POWER STEERING



# LUBRICATION



CLIPPER DELUXE—5592, CLIPPER SUPER—5542, 47, Equipped with TWIN ULTRAMATIC (TORSION-LEVEL SUSPENSION not used)  
CLIPPER CUSTOM—5562-67, PACKARD—5582-87-88, Equipped with TWIN ULTRAMATIC and TORSION-LEVEL SUSPENSION

With or Without POWER STEERING



# LUBRICATION

## LUBRICATION AND MAINTENANCE SCHEDULE

The lubrication and maintenance schedule chart shows when regular service operations should be performed and serves as a handy guide.

### FACTORY APPROVED LUBRICATION AND MAINTENANCE SCHEDULE

MILES		MILES	
	Chassis lubrication		Repeat 1000 mile lubrication and inspection
	Service battery	9,000	Check wheel alignment
1,000	Check power steering, Ultramatic fluid, transmission and overdrive, rear axle oil levels		Cross switch tires
	Check brake fluid level		
	Check air in tires		Repeat 1000 and 2000 mile lubrication and inspection
			Repack front wheel bearings
2,000	Repeat 1000 mile lubrication and inspection		Clean oil bath cleaner and reoil
	Change engine oil	10,000	Tune engine
	Clean and reoil filler cap mesh		Renew spark plugs and ignition points
			Clean fuel system and carburetor
3,000	Repeat 1000 mile lubrication and inspection		Check entire electric system
	Check wheel alignment		Align headlights
	Cross switch tires		Inspect and adjust service and hand brakes
			Replace power brake filter element
4,000	Repeat 1000 and 2000 mile lubrication and inspection	15,000	Repack universal joints—(cars equipped with Twin Ultramatic Trans.)
	Change oil filter cartridge		
		20,000	Repack rear wheel bearings
5,000	Repeat 1000 mile lubrication and inspection		
	Clean oil bath cleaner and reoil	25,000	Change Ultramatic fluid
	Tune engine		Remove and clean Ultramatic oil screen
	Clean fuel strainers and adjust carburetor		
	Adjust service and hand brakes		
6,000	Repeat 1000 and 2000 mile lubrication and inspection	EVERY SPRING	Drain and refill transmission and overdrive
	Check wheel alignment		Flush out cooling system
	Balance wheels		Clean out gasoline lines and strainers
	Cross switch tires		
7,000	Repeat 1000 mile lubrication and inspection	EVERY FALL	Drain and refill differential
			Flush out cooling system
			Add antifreeze
			Clean out gasoline lines and strainers
8,000	Repeat 1000 and 2000 mile lubrication and inspection	EVERY YEAR	Remove and clean engine oil pan and strainer
	Change oil filter cartridge		
	Clean and adjust spark plugs		

# LUBRICATION

## NOTES

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