

86 C Body

1948

# OWNER'S GUIDE



STUDEBAKER

47  
474

*Champion*

## STUDEBAKER FACTORY WARRANTY

We warrant each new motor vehicle sold by us to be free from defects in material and workmanship under normal use and service, our obligation under this warranty being limited to making good at Studebaker factories any part or parts thereof, including all equipment or trade accessories (except tires) supplied by Studebaker as standard or optional equipment, which shall, within ninety (90) days after making delivery of such vehicle to the original purchaser or before such vehicle has been driven four thousand (4,000) miles, whichever event shall first occur, be returned to us with transportation charges prepaid and which our examination shall disclose to our satisfaction to have been thus defective; this warranty being ex-

pressly in lieu of all other warranties, express or implied, and of all other obligations or liabilities on our part, and we neither assume nor authorize any other person to assume for us any other liability in connection with the sale or use of our motor vehicles.

This warranty shall not apply to any motor vehicle which shall have been repaired or altered outside of Studebaker factories in any way so as, in our judgment, to affect its stability or reliability, nor which has been subject to misuse, negligence or accident, nor to any commercial motor vehicle sold by us which shall have been operated at a speed exceeding the factory rated speed, or loaded beyond the factory rated load capacity.

THE STUDEBAKER CORPORATION  
SOUTH BEND 27, INDIANA

*We reserve the right to make changes in design or to make additions to or improvements upon our products without incurring any obligations to install the same on vehicles previously built.*

### BATTERY WARRANTY

The Willard company provides a 90 day standard factory warranty through their service stations. They also provide an adjustment policy prorated on a sliding scale based on the length of service of the battery.

### RADIO WARRANTY

A Philco radio warranty registration tag is attached to each radio when it is shipped from the factory. If your car is equipped with a radio, your dealer will fill in the tag properly and attach it to the radio. This tag authorizes Philco auto radio service stations to make warranty repairs.

# OWNER'S GUIDE

*for your new 1948*

# STUDEBAKER



## A WORD TO

## THE WISE OWNER

**Y**OU'LL WANT TO TAKE GOOD CARE OF YOUR FINE NEW STUDEBAKER. This book is designed to point out the things you can do toward that end — the correct operation of your car, the main service points to watch, and the minor mechanical adjustments which may be needed from time to time.

Your new car has been checked and prepared for operation by your Studebaker dealer before delivery to you. Because the satisfaction you get from it will depend in large part on the quality of servicing it receives after delivery, we urge you to have only authorized Studebaker service departments perform adjustments or repairs to the car. They have the proper tools and equipment and they receive technical information direct from the factory concerning up-to-date service procedures, techniques, and parts.

During the initial run-in or adjustment period, don't worry if some adjustments are required — but don't neglect them. Make it a point to use authorized Studebaker service and genuine Studebaker parts wherever you go whenever they are needed. Should you have occasion to write the factory regarding parts or accessories, *identify your car by its serial number.*

Studebaker has been serving America since 1852, running the gamut of personal transportation from horse-drawn to motor-driven. We are proud to be known as "America's friendliest factory."

THE STUDEBAKER CORPORATION  
SOUTH BEND 27, INDIANA

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## BE SURE TO READ

### YOUR DEALER SERVICE POLICY

WITH YOUR NEW STUDEBAKER YOU RECEIVED A DEALER SERVICE POLICY from your Studebaker dealer. Please read it carefully.

Under its terms you, as the owner of a new Studebaker, are entitled to receive from your dealer two thorough check-ups during the warranty period, which are important to the efficient operation of your car.


Any Studebaker dealer is authorized to replace, without charge for material or labor, any parts found to be defective under the terms of the Studebaker Factory Warranty.

Always keep your Dealer Service Policy with the car during the warranty period because it will be necessary to present this in order to obtain the parts replacement privileges from other than the Studebaker dealer from whom you bought the car.

DEALER  
SERVICE POLICY  
FOR  
*Studebaker*  
Owners

OWNER'S NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
DELIVERY DATE \_\_\_\_\_  
PURCHASED FROM \_\_\_\_\_

THIS POLICY ISSUED FOR  
STUDEBAKER PASSENGER CAR SERIAL NO. \_\_\_\_\_



## SECTION ONE

### LOCATION OF VEHICLE NUMBERS

#### SERIAL NUMBER \_\_\_\_\_

The serial number of your car is stamped on a plate attached to the left front door lock pillar post. Record it in the space provided.

#### ENGINE NUMBER \_\_\_\_\_

The engine number is stamped on a machined pad at the upper left front of the cylinder block. Record it in the space provided.

#### BODY NUMBER \_\_\_\_\_

The body number is stamped on a plate attached to the dash under the hood. Record it in space provided.

#### KEY NUMBERS \_\_\_\_\_

Ignition and front doors \_\_\_\_\_  
This number is stamped on a metal tag furnished with the keys. Record it in the space provided.

Compartment \_\_\_\_\_  
This number is stamped on the compartment key or on the lock housing. Record it in the space provided.

**Paint and Trim:** When ordering paint work from your dealer, be sure he notes the symbols printed on the sticker attached to the under side of the package compartment, as well as the body and serial numbers above.

When trim materials are needed, it is important that the serial and body numbers which you have recorded above be furnished.

If the gage registers an abrupt or continuous rise to 212° F. (100° C.), stop the car immediately and investigate. Check the fan belt, hose connections, water level, and look for water leaks. Continued use at 212° F. (100° C.) will cause serious damage and unnecessary expense.

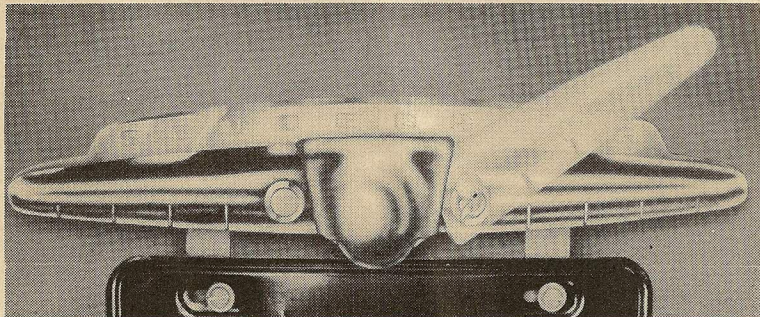
Check the water level frequently.

**Gasoline Gage** The gasoline gage registers when the ignition key is turned either to the right or left. If you wish to know the quantity of fuel in the tank when the engine is not running, turn the ignition key to the left.

**Oil Pressure Gage** The oil pressure gage indicates the working pressure of the oil as it circulates within the engine. Normally, the gage will register between 20 and 40 pounds (1,406 and 2,812 kgs.) at 40 miles (64 km.) per hour. It does not indicate the amount of oil in the crankcase.

If this gage should fluctuate rapidly or drop to zero, STOP the car immediately and check the cause. Continued operation of the car under these conditions will probably cause serious damage.

**Locks and Keys** Two sets of keys are furnished with the car. One key operates the front door external locks and the ignition switch. The other key operates the package compartment, the trunk compartment on sedans, and the rear deck on coupes.



After unlocking, press down on the left wing of emblem and lift up on the right wing. Then open by lifting upward on both wings.

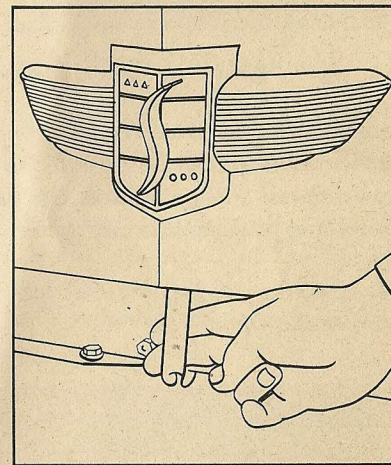
To prevent unauthorized persons from purchasing a duplicate ignition key, the key number does not appear on the key or on the face of the lock, but is stamped on a small metal tag supplied with the keys. The compartment key number is stamped on the key or

on the lock housing. Both key numbers should be recorded on page 5 of this manual or elsewhere among the owner's possessions after which the metal tag should be destroyed.

Duplicate keys can be ordered by key number from the nearest authorized Studebaker service station. If the key numbers are not known, the order must be accompanied by the car serial number.

All doors can be locked from the inside of the car by pushing the inside door handle *up* from the normal position when the door is closed. On front doors the remote control handle, if placed in the locked position when the door is open, will snap into the unlocked position upon closing the door. Rear doors (of four-door models) may be locked by raising remote control handle with door either opened or closed.

**Hood Lock** The hood lock safeguards your battery, carburetor, and other under-the-hood equipment against theft and tampering as long as the car doors are locked. The control button, marked "H", is the second button from the lower end of the instrument panel. To unlock the hood, pull the button until the automatic hood latch is released. To raise the hood, release the safety latch as illustrated. As a safety measure, after raising the hood, remove the forked end of the hood prop from its bracket and place it in the hole provided on the underside of the hood front.



Fingertip release of hood safety latch.

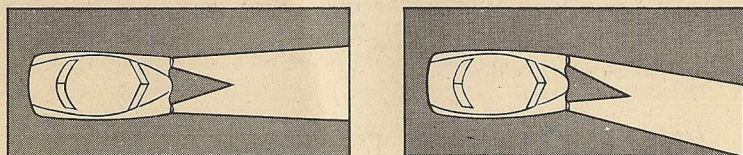
Care should always be taken in raising or lowering the hood. Never try to force the hood lock or safety latch. This might affect adjustments which would result in an improperly operating part.

When the hood is lowered, the automatic hood latch and the safety latch fasten the hood securely.

**Light Control Switch** A control switch button marked "L" of the rotary type is located on the driver's side of the lower instrument board to operate the tail lights, parking lights, and headlights.

**Headlights** Turn the light switch button to the right as far as possible to operate the headlights.

**Headlight Beam Control Switch** The foot operated switch to the left of the clutch pedal operates the headlight beam. Pressure on the switch will change the headlights from country to



*A good driver uses the proper beam at the proper time.*

traffic beam, and vice versa as conditions indicate. When the country beam is in effect the red tell-tale light in the center of the speedometer will be lighted. Use the traffic beam when approaching oncoming traffic and in city driving.

**Parking Lights** Turn light switch button to the first position at the right.

**Instrument and Map Lights** The instruments are lighted with non-glare *black light*. The lights are controlled by a rotary switch located in the center of the headlight switch. Turn the button to the right for ON or left, for OFF.

The ignition lock and surrounding area on the instrument panel are lighted by a map light, which lights automatically when either of the driver's compartment doors are open. The toggle switch directly below the speedometer operates the map light when the front doors are closed.

**License Plate Light** The light for the rear license plate is located in the center of the trunk (or rear deck) handle. The light operates whenever the headlights are turned on.

**Tail Lights** Tail lights go ON whenever the headlights or parking lights are illuminated.

**Stop Lights** They light whenever the brake pedal is depressed, making a distinct red light shine for the benefit of following vehicles.

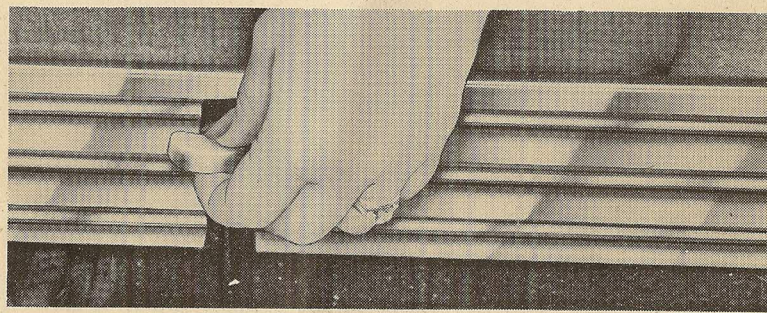
**Package Compartment** To open the package compartment door after unlocking, push in on the lock.

**Windshield Wiper and Washer Control** The windshield wiper control button, marked "W", located at the lower end of the instrument board, is turned to the right to operate the wiper blades. Speed of the blades can be increased by turning the knob further to the right.

The Washer (on cars so equipped) is operated by turning "W" button to the left of the wiper blade OFF position.

**Ash Receiver** To remove the tray for cleaning, push down on the retainer while pulling outward on the tray.

**Front Seat Adjustment** The front seat is easily adjusted forward or backward by raising the control lever at the driver's side of the seat (as shown in the illustration) which unlocks the mechanism and permits the seat to be shifted to the desired position.



*Easily raised, the seat adjustment knob permits moving seat back or forward to driver's comfort. Released, the knob securely locks seat in position.*

In addition to this quickly adjusted shift, there are three basic positions in which the seat can be bolted by your authorized Stude-

baker service dealer to accommodate the leg length of the owner. From any of these basic positions, the front seat adjustment mechanism will give you the full adjustment range.

**Brake Controls** Braking pressure is applied to all four wheels in proportion to the amount of foot pressure applied to the pedal.

The parking brake lever operates independently of the hydraulic brake system, applying brake pressure to the rear wheels only. To set the parking brake, depress brake pedal and pull back parking brake lever. To release the parking brake, turn the handle upwards to the right, letting it move forward.

**Clutch Pedal** The clutch pedal disengages the clutch when depressed, engages it when released. The clutch pedal, depressed to the floorboard, also operates the starter button located directly under the pedal.

**Steering Post Gearshift** The steering post gearshift is operated in the conventional manner, and provides three speeds forward and one speed reverse.



## Caution

**CARBON MONOXIDE** is a lethal gas, odorless, tasteless, and colorless, found in the exhaust fumes of all engines. Never start the engine in a closed garage. Always open garage doors wide before starting and keep them open as long as the engine is operating.

## SECTION THREE

### RUN-IN PERIOD

#### *The First 1000 Miles (1609 km.)*

ALL NEW MOTORS REQUIRE A RUN-IN PERIOD TO INSURE LONG life with maximum performance and economy. Follow the procedure outlined in the next paragraphs.

**Carburetor Speed Control** Your car is equipped with a carburetor speed control which limits its maximum speed during the run-in period. This speed control should remain on the car until your Studebaker dealer removes it at 500 miles (805 km.).

**500 to 1000 Miles (805 to 1609 km.)** When the car is operated at steady speeds above 40 miles (64,4 km.) per hour, release the accelerator occasionally for a few seconds. This will aid in properly breaking in a new engine.

Your car speed during this period should not exceed 60 miles (96,6 km.) per hour.

#### *Engine Oil During Run-In*

The use of special run-in oils is unnecessary. Use only high grade engine oils produced by reputable oil companies.

Change oil at first 500 miles (805 km.) and first 1500 miles (2414 km.). After 1500 miles (2414 km.) the oil should be changed regularly, the frequency depending on the conditions of the oil as affected by operating and atmospheric conditions.



*Oil Level Gage.*

It is a good practice to have the oil level checked whenever gasoline is purchased. If the oil line is down to the Add Oil mark on the oil level gage, oil should be added to bring it up to the Full mark. Do not overfill.

The viscosity, or weight, of the oil to be used depends entirely upon prevailing temperatures. See chart on page 22.

## Package Compartment Card

YOU SHOULD READ THIS CARD FREQUENTLY. THE ERASABLE record will be found handy.

Its location on the back of the package compartment door provides a constant reminder.

If your card becomes lost, torn, or partially destroyed, we shall send you another on request.

## SECTION FOUR

### OPERATING THE CAR

#### Starting the Engine

BEFORE STARTING THE ENGINE BE SURE THE GEARSHIFT LEVER is in neutral position. Depress the accelerator once only and then immediately release it. Turn the ignition key to the right. Then depress the clutch pedal to the toeboard to operate the starter button.

Depressing the accelerator once and immediately releasing permits the automatic choke to come into full operation. This operation is essential to easy starting.

If engine should not start after a few revolutions, completely depress accelerator and, holding it in this position, depress starter button.

*Starting a Hot Engine* An easier start of a hot engine will be obtained if the accelerator is held approximately halfway to the

floorboard until the engine starts. Release the accelerator as soon as the engine starts.

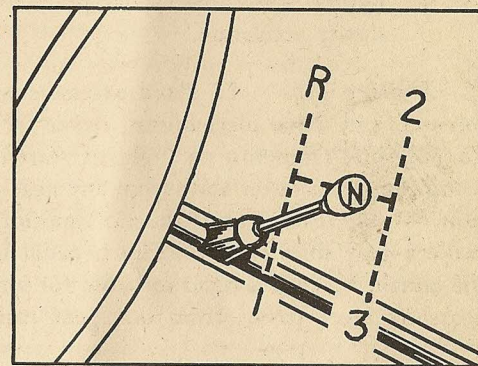
*Warming Up the Engine* A gasoline engine performs best when it reaches an operating temperature of approximately 170° F. (76,7° C.). In cold weather the engine temperature should be raised by allowing the engine to idle slowly before driving the car.

#### Shifting the Gears

TO SHIFT THE GEARS IN EITHER THE CONVENTIONAL OR overdrive ratios with the steering post gearshift lever, follow this procedure:

*To set car into motion*

1. Start engine.
2. Depress clutch pedal.
3. Place gearshift lever in low (first) gear position. (See illustration.)
4. Release parking brake.
5. Release the clutch pedal gradually and at the same time slowly accelerate.



*Gear ratio positions of the fingertip controlled Studebaker gearshift lever.*

*To shift from low to second gear*

1. At approximately 10 miles (16,1 km.) per hour, release accelerator and depress clutch pedal.
2. Place gearshift lever in second (intermediate) gear position. (See illustration.)
3. Release the clutch pedal gradually and at the same time slowly accelerate.



### To shift into high (third) gear

1. At approximately 18 miles (29 km.) per hour, release accelerator and depress clutch pedal.
2. Shift lever into high (third) gear position. (See illustration.)
3. Release the clutch pedal gradually and at the same time slowly accelerate. Without overdrive, this is the highest or cruising gear ratio.

### To shift into reverse gear

1. From any speed, bring car to complete stop.
2. Depress clutch pedal.
3. Place lever in reverse gear position.
4. Release the clutch pedal gradually and at the same time slowly accelerate.

**Shifting Tips** To avoid excessive wear on the clutch, transmission, and drive mechanisms, never try to jump gears (that is, do not shift from low to high, or start out in second and avoid using low) and never shift from any gear — even the neutral position — into reverse until the car's motion is stopped. Also, never make a gear shift until the clutch pedal is depressed, disengaging the clutch. Make it a habit to pause for an instant in neutral as the gearshift lever passes from one gear ratio to another.

### Transmission Overdrive

THE AUTOMATIC OVERDRIVE OPERATES ONLY WHEN THE control button (marked OD) is flush with the instrument panel. It engages automatically when the accelerator is released momentarily at or above the overdrive cut-in speed of approximately 31 miles (49,9 km.) per hour.

If, while in overdrive, it is desired to gain more power while passing cars in traffic or, on grades, push the accelerator to the floorboard, which places the transmission in conventional. The conventional gear ratio will continue until the accelerator is again released, at which time the gear ratio will automatically change to overdrive.

The overdrive button can be pulled out, thereby locking the transmission in the conventional position, whenever it is desired

to operate the car under conditions such as mountain driving, descending steep grades, or whenever it is desired to tow the car in gear. The circumstances under which this change can be made safely are explained in the next two paragraphs.

To change the transmission from overdrive to conventional gear when driving below the overdrive cut-in speed of approximately 31 m.p.h. (49,9 km.), accelerate the engine, then remove foot from the accelerator, depress the clutch pedal and at the same time pull out the OD control button.

To change the transmission from overdrive to conventional when driving in overdrive, completely depress the accelerator past the wide-open throttle position and, as soon as the transmission is in conventional, pull out the OD control button.

The OD control can be placed in the overdrive position at any forward speed by simply pushing the control button forward until it is flush with the instrument panel.

*Overdrive is special equipment available at extra cost.*

### Automatic Hill-Holder

THE AUTOMATIC HILL-HOLDER RETAINS THE SAME DEGREE OF brake pressure on an upgrade as that applied by the driver in stopping *as long as the clutch pedal is depressed*. This permits the right foot to be removed from the brake pedal to operate the accelerator when ready to resume forward motion. Releasing the clutch pedal releases the action of the Hill-Holder.

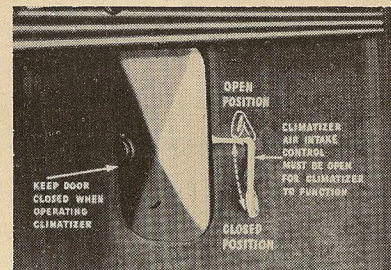
*Hill-Holder is special equipment available for the Champion at extra cost.*

### Studebaker Climatizer and Defroster

THE STUDEBAKER CLIMATIZER IS A FRESH AIR HEATING AND ventilating system. Fresh air passes through an air duct and then through the Climatizer heater core. The warmed air is discharged below the front seat and spreads uniformly through the car interior.

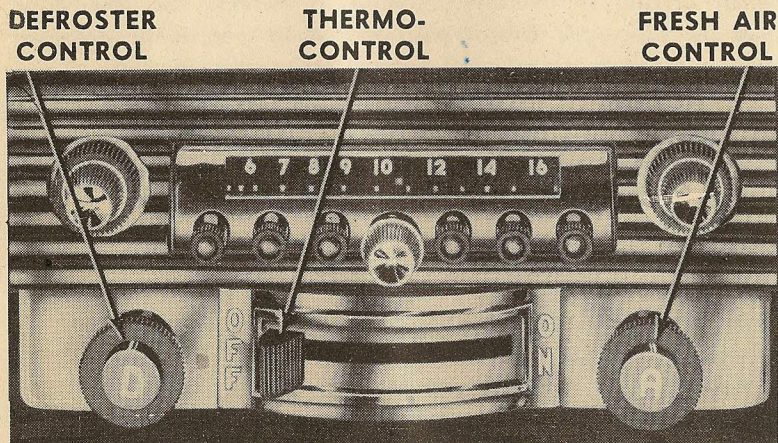
#### Climatizer Operation

1. Open outside right air intake at cowl. Be sure the inside ventilator door on right kickpad is closed. Also close left cowl ventilator.



*Inside ventilator door and outside air intake control.*

2. Shift the Thermo-Control lever to the right to the position which gives the temperature desired by the car occupants.
3. If maximum air circulation is desired, turn Fresh Air (A) motor control knob to the right to its first position. Continued rotation of the knob decreases the air flow.
4. Open one or more ventilator windows slightly to keep steam from forming on the windows.



The Climatizer and defroster controls are clearly labeled, conveniently located.

**Defroster Operation** Turn the rotary switch ("D" on lower left of Climatizer instrument panel) to the right. First position to right increases hot air flow through defroster ducts; turning switch further to the right decreases the air flow.

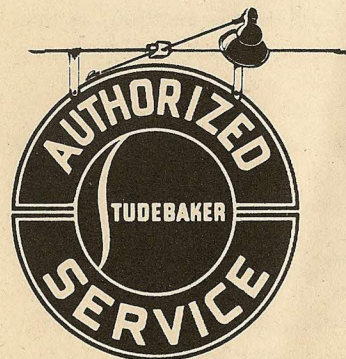
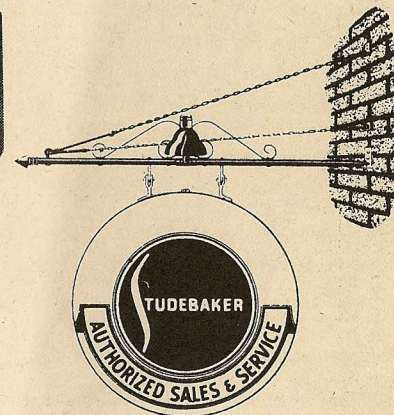
*Climatizer and defroster are special equipment available at extra cost.*

### Push or Tow Starting

SHOULD THE BATTERY FAIL TO SUPPLY ENOUGH CURRENT TO start the engine with the starter, place the transmission in conventional high gear and either push or tow the car until the engine starts. OD button (on cars so equipped) must be in Out position. Be sure ignition is ON and parking brake released.

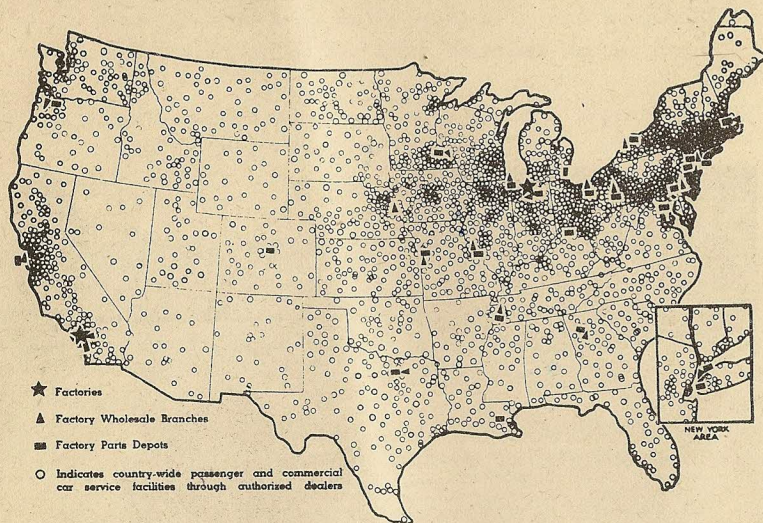
## SIGNS OF

## SATISFACTORY SERVICE



One of the three standard red and blue Studebaker Service Signs, illustrated, is displayed by authorized Studebaker dealers. This sign symbolizes friendly, efficient service — at reasonable cost.

## AND PARTS DEPOTS



Studebaker maintains wholesale branches and parts depots throughout the country. Parts depots are situated for delivery of parts to any dealer within 24 hours of receipt of an order.

### THE ADDRESSES OF OUR BRANCHES AND PARTS DEPOTS ARE:

CITY	BRANCH ADDRESS	PARTS DEPOT ADDRESS
Atlanta, Ga.	910 Rhodes-Haverty Bldg.	232 Luckie St., N. W.
Baltimore, Md.		242 W. 29th St.
Boston, Mass.	933-935 Park Square Bldg.	15 Leon St.
Brooklyn, N. Y.		4 Church Ave.
Buffalo, N. Y.	1406 Liberty Bank Bldg.	128 Perry St.
	424 Main St.	
Chicago, Ill.	1206 Field Bldg.	4640 W. 54th St.
	135 S. LaSalle St.	
Cincinnati, Ohio	711 Union Trust Bldg.	426 East 6th St.
	4th and Walnut Sts.	
Cleveland, Ohio	902 Union Commerce Bldg.	10630 Berea Rd.
	9th & Euclid Ave.	
Dallas, Texas	1924 Cedar Springs	3720 La France St.
Denver, Colorado		2762 Walnut St.
Detroit, Mich.		12345 Woodward Ave.
Kansas City, Mo.	2706 Power & Light Bldg.	1116 E. 15th St.
	14th and Baltimore Sts.	
Memphis, Tenn.	2012-2016 Sterick Bldg.	296-298 Monroe Ave.
Minneapolis, Minn.	Foshay Tower	658 Stinson Blvd.
	114 S. 9th St.	
Newark, N. J.		1020 Broad St.
New Orleans, La.		1644 Religious St.
New York, N. Y.		636 Eleventh Ave.
Omaha, Neb.	1751 Broadway	
Philadelphia, Pa.	1401-1410 1st Natl. Bank Bldg.	401 N. Broad St.
Pittsburgh, Pa.	401 N. Broad St.	1816 Locust St.
	Continental Commercial Bldg.	
	5526 Penn. Ave.	3508 Lindell Blvd.
St. Louis, Mo.	1229-1232 Syndicate Trust Bldg.	
	915 Olive St.	
South Bend, Ind.	635 S. Main St.	West Eckman St.
Los Angeles, Calif.	4530 Loma Vista Ave.	4707 District Blvd.
Portland, Ore.	2355 N. W. Quimby St.	2355 N. W. Quimby St.
San Francisco, Calif.	701 Bryant St.	701 Bryant St.

## LUBRICATION

### Periodic Inspections

IT IS WELL FOR REASONS OF ECONOMY AND TO FORESTALL unexpected need of service to have your car inspected once a month or at 1000 mile (1609 km.) lubrication periods. An ideal time to have many of the parts or units inspected is while the car is on the lubrication hoist in the raised position, although there are other inspection points which should be periodically examined.

### Lubrication and Related Operations

PROPER LUBRICATION IS GOOD ASSURANCE THAT YOUR CAR WILL continue to perform with increasing satisfaction. Only high grade lubricants should be used on your car.

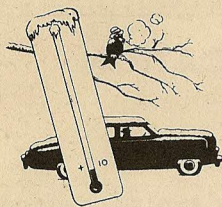
Your Studebaker dealer knows every lubrication requirement for your car. Take it to him for periodic lubrication. The recommendations given in the following paragraphs are, in many ways, the most important in this entire booklet. If a lubrication service must of necessity be performed by a non-Studebaker serviceman, be sure he understands the requirements mentioned in this section and on the chart on pages 24 and 25.

**Universal Joints** Lubricate with light weight chassis lubricant at 1000 mile (1609 km.) intervals. Only a low pressure (hand) gun should be used to lubricate these bearings.

**Transmission Lubricant** The transmission should be filled to the level of the filler plug hole with S.A.E. 90 mineral oil gear lubricant or S.A.E. 40 engine oil, both summer and winter. On cars equipped with overdrive transmission the main case and the overdrive case should be filled separately. For transmission capacities see table on page 42.

**Rear Axle Lubricant** Use S.A.E. 90 hypoid lubricant for summer and winter. Do not mix various brands of hypoid lubricants. Use light engine oil for flushing. *Do not use kerosene.*

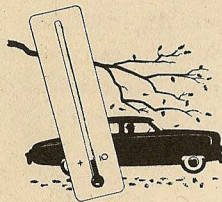
Under conditions where SAE 20 engine oil is specified, it is satisfactory to use an oil labeled 20W AND SAE 20. In case of an SAE 10 engine oil, it is satisfactory to use one labeled 10W AND SAE 10.



## Winter

**Lowest Temperature Anticipated**  
BELOW +10° F.

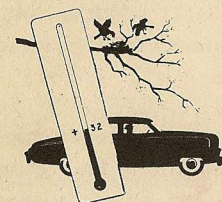
Cars equipped with overdrive transmissions S. A. E. NO. 10	Cars equipped with conventional transmissions S. A. E. NO. 10
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## Early Spring Late Fall

**Lowest Temperature Anticipated** +10° F.

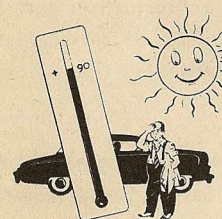
Cars equipped with overdrive transmissions S. A. E. NO. 10	Cars equipped with conventional transmissions S. A. E. NO. 20
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## Early Fall Late Spring

**Lowest Temperature Anticipated** +32° F.

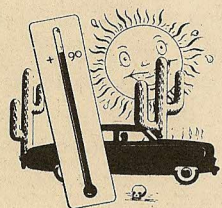
Cars equipped with overdrive transmissions S. A. E. NO. 20	Cars equipped with conventional transmissions S. A. E. NO. 30
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## Summer

**Average Daytime Temperature** +90° F.

Cars equipped with overdrive transmissions S. A. E. NO. 20	Cars equipped with conventional transmissions S. A. E. NO. 30
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## High Speed or Hard Pulling

**Average Daytime Temperature** Above +90° F.

Cars equipped with overdrive transmissions S. A. E. NO. 40	Cars equipped with conventional transmissions S. A. E. NO. 40
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Engine Oil Specification Chart.

**Spring Lubricant** Springs should always be lubricated with a good quality graphite spring lubricant, specially compounded for this purpose.

**Crankcase Oil Level** The oil in the crankcase is checked by withdrawing the oil level gage on the left side of the engine. The oil filler pipe cap contains a filtering element to clean the air of any impurities before it enters the crankcase. This filter is easily cleaned by removing the cap and immersing it in kerosene. Allow filter cap to dry thoroughly. Then dip cap in a good grade of engine oil so that filtering element is thoroughly oil coated. Drain off excess oil and replace cap. It's a good idea to have the oil level checked when purchasing gasoline.

Never allow oil level shown on oil level gage to fall below the ADD OIL mark. Do not overfill.

**Engine Oil Cleaner** The Fram oil filter (on cars so equipped) assists in removing dirt and foreign matter from the oil and is provided with a replaceable filter element.

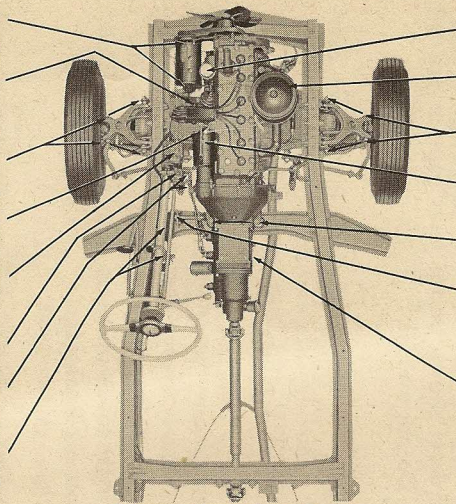
Under normal conditions the oil cleaner cartridge should be replaced after approximately every 5000 miles (8046 km.) of operation. Severe dust conditions may warrant replacing the cartridge at correspondingly lower mileages. This is usually indicated by dirty oil shown on oil level gage.

When it is necessary to replace the cartridge, care should be taken to see that a new cover gasket is installed and that the cover is securely tightened. The cover should also be checked occasionally to make sure that it remains tight.

**Engine Oil Renewal** Engine oil should be changed at the end of the first 500 miles (805 km.) and again after the first 1500 miles (2414 km.) of operation. After this period the oil should be changed regularly, the frequency depending on the condition of the oil as affected by operating and atmospheric conditions.

Under average driving conditions oil should be changed at 2500 to 3000 mile (4023 to 4828 km.) intervals.

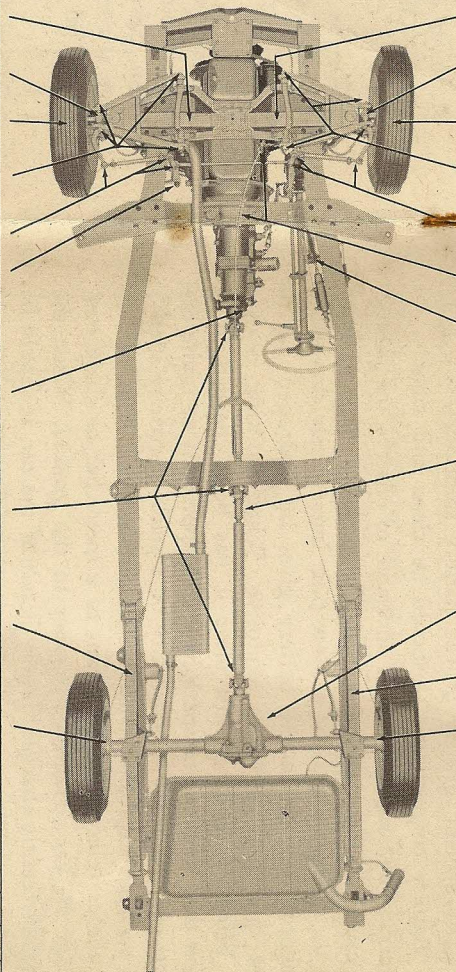
★		GENERATOR - 2 Oilers - SAE No. 20 Engine Oil
★		DISTRIBUTOR - SAE No. 20 Engine Oil on Felt Under Rotor. Small Amount of Vaseline on Cam. Wheel Bearing Lubricant in Grease Cup.
	★	UPPER CONTROL ARM BUSHINGS - 4 Fittings - Light Weight Chassis Lubricant
	★	THROTTLE CONTROLS - Engine Oil
	★	STEERING GEAR - Special Lubricant as Approved by Ross Tool and Gear Company of Lafayette, Indiana.
★		GEAR SHIFT CONTROL CASE - Remove Plug - Light Weight Chassis Lubricant
	★	GEAR SHIFT RODS - Engine Oil
	★	CLUTCH PEDAL LINKAGE - 2 Clevis Pins - Engine Oil



Lubrication Points - Top of Chassis

		ENGINE OIL PAN FILLER TUBE - Check Oil Level When Purchasing Gasoline		
		CARBURETOR AIR CLEANER - Service according to Instructions in Text.		
	★	UPPER CONTROL ARM BUSHINGS - 4 Fittings - Light Weight Chassis Lubricant		
		STARTER MOTOR - 1 Oiler - SAE No. 20 Engine Oil		★
	★	CLUTCH RELEASE SHAFT - 2 Oilers - Engine Oil		
	★	CLUTCH OPERATING SHAFT BRACKET BEARING - Engine Oil		
		TRANSMISSION - Conventional and Overdrive		
		CHECK LEVEL		★
		DRAIN AND FLUSH		★
		LUBRICANT - SAE No. 40 Engine Oil or a High Grade Mineral Oil Gear Lubricant of SAE No. 90 Viscosity for Both Summer and Winter. Gear Lubricants Containing Any Extreme Pressure Ingredients, Such as Lead, Sulphur, or Chlorine Compounds Must Not Be Used.		

★	See *	SPRING LEAVES - Graphite Spring Lubricant
	★	STEERING KNUCKLE - 1 Fitting - Light Weight Chassis Lubricant
★		FRONT WHEEL BEARINGS - Wheel Bearing Lubricant
	★	LOWER CONTROL ARM BUSHINGS - 4 Fittings - Light Weight Chassis Lubricant
	★	TIE ROD BALL JOINTS - 3 Fittings - Light Weight Chassis Lubricant
	★	AUXILIARY ARM BUSHING - 1 Fitting - Light Weight Chassis Lubricant
		CLUTCH RELEASE BEARING - No Lubricant Required
★		SPEEDOMETER CABLE - SAE No. 90 Gear Lubricant
	★	UNIVERSAL JOINTS - 3 Fittings - Light Weight Chassis Lubricant
★	See *	SPRING LEAVES - Graphite Spring Lubricant
★		REAR AXLE SHAFT BEARING - Wheel Bearing Lubricant
1,000 Miles (1.609 Km.)		
5,000 Miles (8.046 Km.)		
10,000 Miles (16.090 Km.)		



Lubrication Points - Bottom of Chassis

		SPRING LEAVES - Graphite Spring Lubricant	See *	★
	★	STEERING KNUCKLE - 1 Fitting - Light Weight Chassis Lubricant		
		FRONT WHEEL BEARINGS - Wheel Bearing Lubricant		★
	★	LOWER CONTROL ARM BUSHINGS - 4 Fittings - Light Weight Chassis Lubricant		
	★	TIE ROD BALL JOINTS - 3 Fittings - Light Weight Chassis Lubricant		
	★	PARKING BRAKE LINKAGE - Spray - Engine Oil		
	★	CLUTCH AND BRAKE PEDALS - 1 Fitting - Light Weight Chassis Lubricant		
		PROPELLER SHAFT SPLINES - 1 Fitting - Light Weight Chassis Lubricant	★	
		REAR AXLE - CHECK LEVEL - DRAIN AND FLUSH - LUBRICANT - Use Studebaker Hypoid Lubricant or Any S.A.E. No. 90 Hypoid Lubricant Manufactured by a Reputable Oil Company. Do Not at Any Time Mix Various Brands of Hypoid Lubricants.		★
	★	SPRING LEAVES - Graphite Spring Lubricant	See *	★
		REAR AXLE SHAFT BEARING - Wheel Bearing Lubricant		★
1,000 Miles (1.609 Km.)				
5,000 Miles (8.046 Km.)				
10,000 Miles (16.090 Km.)				

The lubrication periods established are for average use and should be changed to suit individual operating conditions.

\* Springs equipped with lubrication fittings can be conveniently lubricated at the regular 1000 mile (1.609 km.) period.

## MAINTENANCE AND CARE OF THE CAR

### Storage Battery

THE STORAGE BATTERY IS LOCATED UNDER THE HOOD ON THE left side. The carrier clamp bolt wing nuts should be kept finger tight but not so tight as to crack the battery case.

Have the following three items checked frequently:

1. Water level — maintain at the proper height with distilled water.
2. The specific gravity of the battery solution.
3. Battery connections — should be clean and tight.

**Charging Precautions** It is advisable to observe the following precautions when charging batteries at home or elsewhere. During the charging and for a short time immediately thereafter, the chemical reaction in the battery gives off hydrogen gas in sufficient quantities as to be explosive. When working near a battery being charged, or just after it has been charged, it is important that no flame or spark have an opportunity to ignite the hydrogen gas. To prevent possibility of a static electricity spark's causing such an explosion with batteries in the car, it is well to ground the car electrically by means of a metal bar or chain running from the car's frame or bumper to the ground. When the charging or recently charged battery is out of the car, it should be placed where no flame, spark, or static electricity can contact it.

### Minimize Oil Dilution and Sludge

THE CRANKCASE IS PROVIDED WITH A CROSS VENTILATION system to reduce harmful dilution of the engine oil by water and fuel. Crankcase dilution is aggravated by low speed driving with frequent stops and starts because the engine does not warm up to the normal operating temperature. The driver can materially assist in preventing this condition by observing the following suggestions:

1. After starting, give the engine time to warm up before driving.
2. Keep the engine in good mechanical condition. See that the compression is good and that the ignition and carburetion systems are kept in peak condition.

(Continued on page 28)

## How to Use Your Car Jack . . .

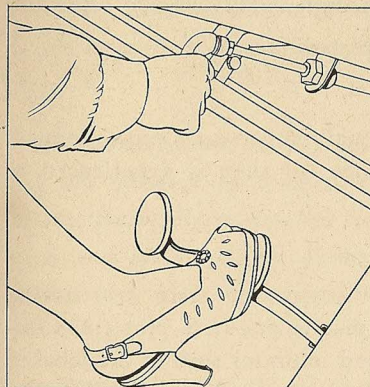


Fig. 1 — Before using jack, set parking brake by depressing foot brake and pulling parking brake handle out.

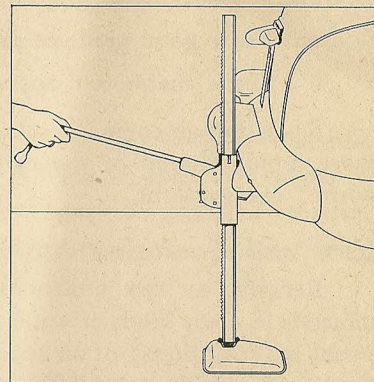


Fig. 2 — Place nub of jack into hole on under side of bumper. Then move base of jack approximately 1 inch forward and jack up. Lever of jack mechanism should be UP to raise car, DOWN to lower car.

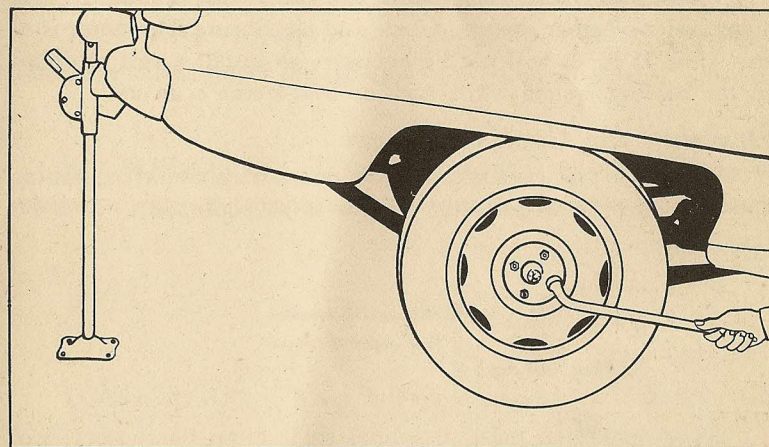


Fig. 3 — To remove wheel nuts, use the box wrench end of jack handle after removing hub cap with other end of the handle. Wheels can then be easily slipped off or on the drum.

3. Clean the crankcase at least once a year, preferably when winter oil is changed for summer weight oil.
4. Use the proper grade of a high quality engine lubricant.
5. Use a good grade of fresh gasoline.
6. Check thermostat operation.

Operating an engine at subnormal temperatures causes a much more rapid dilution of the crankcase oil than is experienced at normal temperatures.

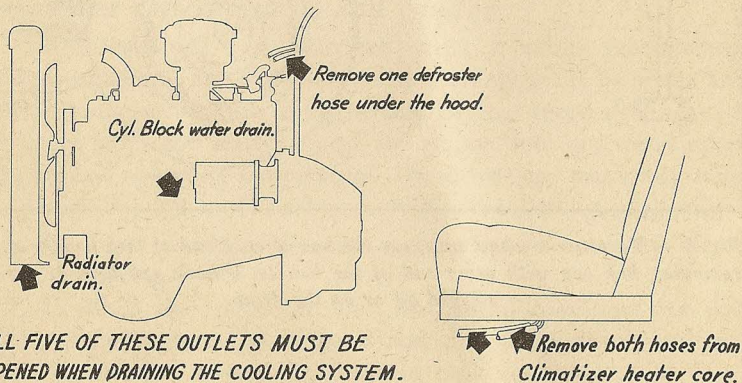
### *Rust and Corrosion Inhibitor*

BECAUSE OF THE CHEMICAL REACTION OF LIME AND OTHER minerals in many kinds of water to metals, one U. S. pint (.833 Imperial pt., 0,47 liters) of an approved inhibitor such as Studebaker Cooling System Rust Inhibitor or Resistor should be added to the cooling system of every new car and replenished as needed throughout the life of the car. This will help protect the entire cooling system (radiator, cylinder block, cylinder head, and water pump) from any chemical corrosions, rusts, or calcification within the radiator core which may stop the passages. This does not, however, dispense with the need of flushing the cooling system seasonally, spring and fall.

Many anti-freeze compounds contain a rust inhibitor. Ask your dealer whether the anti-freeze you use during the winter is of this kind. If so, it will not be necessary to install a rust inhibitor in the cooling system while such an anti-freeze is in use.

### *Draining the Cooling System*

TO DRAIN THE COOLING SYSTEM, DRAIN THE RADIATOR, BLOCK, and Climatizer and defroster (if car is so equipped).



ALL FIVE OF THESE OUTLETS MUST BE OPENED WHEN DRAINING THE COOLING SYSTEM.

## *Gasoline Economy*

THE KIND OF GASOLINE YOU USE IN YOUR NEW STUDEBAKER is an important factor in performance, economy, and service.

*It is important to purchase your gasoline from a dealer selling the product of a reputable refinery in sufficient volume to assure fresh, clean gasoline which hasn't accumulated moisture, dirt, and tank settlings from lying dormant for relatively long periods.*

**SPEED** Drive at moderate speeds.

**IDLING** Shut off the engine while parked, even for a few minutes, such as waiting for long freight trains at railroad crossings. Idling, except to warm up a cold engine, is sheer waste.

**STOPPING** Come to a gradual stop whenever possible. This saves fuel, brake lining, and tires.

**ACCELERATING** If peak economy is to be obtained, acceleration must be gradual. Rapid acceleration wastes gasoline.

**TIRES** Keep your tires properly inflated.

**LUBRICATION** Keep both the engine and chassis well lubricated at all times. This reduces friction to a minimum.

**MECHANICAL CONDITION** Periodic "tuning" of the engine by your Studebaker dealer's service department will insure maximum mechanical efficiency necessary to good gasoline mileage.

## Tire Inflation and Care

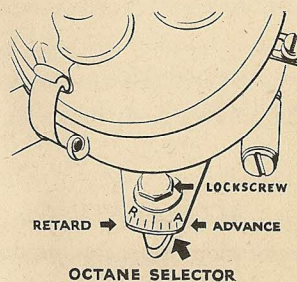
THE SYNTHETIC TIRES IN USE TODAY BUILD UP GREATER pressures from long high speed driving than did the natural rubber tires formerly used. Inflate and check tires to recommended pressures with the tires cold (at local temperatures), and not after a long run.

If your tires are checked immediately after a long, hot run do not permit the attendant to reduce the pressures by letting out air. Wait until the tires have had a chance to cool before checking pressures.

To assure even wearing of all tires, have your Studebaker dealer criss-cross them according to the latest factory recommendations at approximately 4000 mile (6437 km.) intervals.

## Octane Selector

THE ENGINE IS EQUIPPED WITH AN OCTANE SELECTOR WHICH permits the advance or retard of the ignition timing to give economy of fuel consumption and noiseless combustion relative to the type of gasoline used. The selector should be adjusted with the engine at normal operating temperature, as shown by the heat indicator on the dash. Slightly loosen the lock screw and advance the "A" side of the scale toward the pointer until a slight knock is heard at wide open throttle operation on the road, then slowly move the "R" side of the scale toward the pointer until the knock is no longer heard. After final adjustment has been made, secure the selector in position with the lock screw. This adjustment should be made preferably by a Studebaker dealer.



## Carburetor Air Cleaner

TWO TYPES OF AIR CLEANERS ARE AVAILABLE FOR STUDEBAKER cars. One is of the "oil filter" type for cars operated a greater part of the time over pavement and roads which are comparatively free from dust. The other is known as the "wet" (or "oil bath")

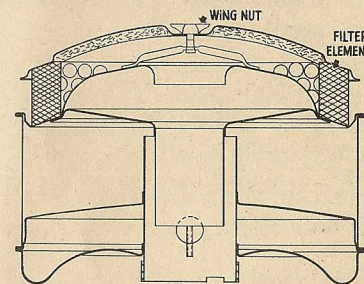
type and is available at extra cost as an accessory for cars operated where dust conditions are severe.

Dust particles, although microscopically small, are highly abrasive and tend to score and cut the smooth glasslike surface of working parts and increase the frictional wear present in all engines. The proper type of air cleaner installed on your car, properly maintained and serviced, will increase the life of the engine, and aid in maintaining its normal efficiency.

Because local conditions alone determine the need of service in your air cleaner, it will be necessary to ask your dealer how often this should be performed.

*To service the oiled filter type:*

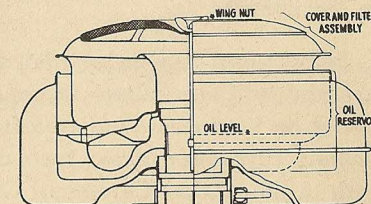
1. Remove filter element and wash in kerosene.
2. Drain thoroughly.
3. Submerge it in a good grade of engine oil.
4. Let excess oil drain off.
5. Replace the element in the air cleaner shell.



*Oiled Filter (Dry) Air Cleaner.*

*To service the wet (oil bath) type:*

1. Unscrew wing nut and remove cover-and-filter assembly.
2. Wash in kerosene.
3. Drain thoroughly.
4. Clean out lower oil base or reservoir.
5. Fill to indicated level marked on inside of lower metal housing. See instructions on side of air cleaner for proper oil weight.
6. Replace cleaned and dried cover-and-filter assembly, and tighten wing nut.



*Oil Bath (Wet) Air Cleaner.*



## *Care of Car Finish*

THE HIGH LUSTER, HARD-BAKED ENAMEL FINISH OF YOUR NEW Studebaker is best retained by an application of Studebaker combination Cleaner and Polish or Studebaker Cleaner and Wax after each washing. The enamel, however, should not be subjected to an application of wax of any kind during the first 60 days so that sufficient time may be provided for the finish to become fully hardened.

Approved Studebaker Body Cleaner and Polish (or Wax) are available from your Studebaker dealer. These are recommended to remove the accumulation of road scum and dullness resulting from weather or road conditions and to restore the luster of the enamel finish. Do not become alarmed when polishing or waxing if a slight amount of color appears on the cloth. This is a natural condition.

Alcohol, anti-freeze mixtures containing alcohol, and calcium chloride or other chemical mixtures used to melt snow and ice or to settle dust should be flushed with water as soon as possible in order to avoid damage to the enamel finish and chromium parts.

## *Washing the Car*

WHEN WASHING THE CAR, FIRST SATURATE ALL FOREIGN substances on the finish with cold water. Then use a clean sponge and running water for the removal of dirt. Dry the body with a clean, damp chamois skin, using a straight horizontal or vertical motion, rather than a circular motion. It is important that a different sponge and chamois skin be used on the body from that used on the chassis.

Chromium and nickel plated finishes are of a perishable nature and will deteriorate if not properly cared for. These parts should be kept clean and free from dirt and foreign matter. For cleaning chromium plated parts use either clear water and a clean cloth or Studebaker Chromium Cleaner, available from Studebaker dealers. To protect the finish after the parts are cleaned, rub with a clean cloth that has been lightly saturated with oil, or apply a coating of wax. A coating of clear enamel will permanently protect chrome and nickel finishes.

## *Care of Cloth Upholstery*

CLEAN UPHOLSTERY MEANS NOT ONLY A BETTER LOOKING automobile but gives longer wear and affords greater comfort and enjoyment.

The use of a vacuum cleaner and a thorough brushing of the upholstery and headerlining (with the nap or pile) will usually brighten the interior noticeably. Remove the cushions from the car and brush to remove foreign particles from the fabric.

The Studebaker Fabric Cleaner (available through Studebaker dealers) is effective in removing all types of stains and does not harm the upholstery.

Seat and side upholstery can be washed safely with soap and water. Use lukewarm water and a neutral soap. The suds should be good and frothy, not watery. Apply in moderate quantities with a damp cloth, sponge, or soft brush. Remove soap suds with a clean, damp cloth or sponge, then wipe the surface several times with a dry cloth. While the material is still damp, brush it lightly with a whisk broom or brush of medium stiffness. Permit air to circulate freely over the wet upholstery. When dry, brush again to loosen any minute matting. When brushing, always brush fabric with the lay of the pile or nap.

## *Cleaning Leather Upholstery*

LEATHER UPHOLSTERY MAY BE CLEANED WITH A SOFT SPONGE and saddle soap.

Make a light suds with lukewarm water and saddle soap. This type of soap is especially suitable for cleaning leather and leaves the surface soft and pliable.

Rinse the sponge occasionally in clean water. After completing the cleaning operation, use a clean soft cloth to polish the surface of the leather.

## *Cleaning Rubber Parts*

STUDEBAKER CHROMIUM CLEANER (POWDER TYPE AC-1464) is recommended for cleaning white sidewall tires. Studebaker Black Rubber Finish is recommended for black tires and all black rubber parts.

## MINIMUM SEASONAL SERVICES

Whether you live — and do most of your driving — in the North or in the South, your car will operate during the spring and summer months under totally different conditions from which it did in the fall and winter.

Because of this it is important that careful seasonal conditioning be given your car in the spring, after the colder, slower driving of winter, and again in autumn to prepare for the lower temperatures after six months of faster, hotter driving. Below are the minimum number of items which we recommend be checked each spring and fall.

### SPRING

**COOLING SYSTEM:** Drain and reverse flush. Check thermostat. ▼ Check condition of radiator hose and fan belt. ▼ Refill cooling system and install Rust Inhibitor.

**CRANKCASE:** Clean inside of engine crankcase. ▼ Clean Floto screen. ▼ Change engine oil. ▼ Install new filter cartridge if not recently changed.

**BRAKES:** Check brakes for need of service.

**STEERING:** Check wheel alignment (camber, toe-in, king pin inclination). ▼ Inspect all steering connections.

**GENERATOR:** Check generator output.

**BATTERY:** Test specific gravity of battery. ▼ Check water level. ▼ Clean, tighten, and coat terminals with vaseline.

**CYLINDER HEAD:** Tighten cylinder head bolts.

**LUBRICATION:** Chassis lubrication (unless performed in last 1000 miles) including any periodic lubrication requirements due.

**FUEL SYSTEM:** Clean fuel pump bowl and reset carburetor adjustment if necessary.

**STARTER:** Check efficiency for proper current draw from battery.

### FALL

**COOLING SYSTEM:** Drain and reverse flush cooling and heating systems. ▼ Check entire system for leaks. ▼ Refill radiator with correct anti-freeze solution, including Rust Inhibitor if not contained.

**CRANKCASE:** Drain and refill crankcase with good oil of correct grade. ▼ Change filter cartridge if not recently changed.

**BRAKES:** Check brakes for need of service.

**STEERING:** Check wheel alignment (camber, toe-in, king pin inclination). ▼ Inspect all steering connections.

**GENERATOR:** Check generator output.

**BATTERY:** Test specific gravity of battery. ▼ Check water level. ▼ Clean, tighten, and coat terminals with vaseline.

**CYLINDER HEAD:** Tighten cylinder head bolts.

**LUBRICATION:** Chassis lubrication (unless performed in last 1000 miles) including any periodic lubrication requirements due.

**FUEL SYSTEM:** Clean fuel pump bowl and reset carburetor adjustment if necessary.

**STARTER:** Check efficiency for proper current draw from battery.

HAVE CAR INSPECTED FOR ADDITIONAL SERVICES REQUIRED TO IMPROVE PERFORMANCE AND APPEARANCE. The above Spring and Fall seasonal service requirements will vary with the climatic zones in which your car is being operated.

## SECTION SEVEN

### SERVICE AND ADJUSTMENTS

#### Engine Tune-Up

OCCASIONALLY YOUR SERVICEMAN WILL RECOMMEND AN engine tune-up. The frequency of a tune-up depends almost entirely on the amount of driving and the type of driving you do. When you purchase a tune-up, we recommend that you request at least the following operations:

1. Check the manifold heater valve for free operation.
2. Clean and adjust spark plugs; install with new gaskets.
3. Clean carburetor air cleaner.
4. Clean fuel pump bowl and strainer; install with new gasket.
5. Clean inside of distributor cover, cable terminals, and sockets.
6. Tighten cylinder head cap screws and/or nuts to recommended tension.
7. Adjust fan belt.
8. Remove and clean carburetor choke thermostatic control. Replace with new gasket and adjust, if necessary.
9. Check and set ignition timing.
10. Adjust carburetor idle screw with engine at normal operating temperatures.
11. Adjust idle stop screw to produce engine speed corresponding with 8 miles (12.9 km.) per hour road speed.

*Carburetor Adjustment for High Altitude* The carburetor is carefully calibrated to provide efficient operation. Studebaker dealers are acquainted with the adjustments which are needed for high altitude operation.

*Brake Adjustment* The self-adjusting brakes on your car are self-compensating for lining wear and require no adjustment. They are properly set at the factory.

With each application of the brakes, however, the linings wear and after a time, new linings should be installed to provide the maximum braking area and to avoid damage to the brake drums. When the lining needs replacement, the self-adjusting feature ceases to operate. When this occurs, the brake pedal free travel will increase and the driver is warned that the brakes need relining. If your brakes do not operate satisfactorily, see your Studebaker dealer.

*Clutch Pedal Travel Adjustment* Clutch pedal free travel is the distance the pedal moves forward before resistance of the release mechanism is felt. When the free travel is greater than one inch (25,4 mm.) or less than one-half inch (12,7 mm.) adjustment should be made by your Studebaker dealer.

*Fan Belt Adjustment* To insure efficient fan and generator operation, it is important that the fan belt is not over-tightened. Any readjustment should be performed by a Studebaker dealer.

*Shock Absorber Adjustment* Although the shock absorber adjustment is correctly set at the factory for average owner requirements, unusual road or driving conditions may make a slight readjustment desirable. This adjustment is very sensitive and should be made only by your dealer, who is equipped to make adjustments.

Only the correct Houdaille shock absorber fluid should be installed and then only by a Studebaker dealer. It is recommended that the fluid level be checked at 5000 mile (8046 km.) intervals.

*Climatizer Filter Service* The air filter (on cars so equipped) requires cleaning in proportion to the amount of driving done under dusty conditions. Have your dealer check this frequently and service as required to provide maximum efficiency from the Climatizer.

*Body Drain Holes* All drain holes should be kept open to prevent accumulation of water.

*The door drain holes are easily cleared with a pen-knife or other flat instrument which can be inserted in the holes and run back and forth a few times to loosen any congestion.*

Body drain holes should be cleared by the serviceman.



## TECHNICAL REFERENCE DATA

IF EMERGENCY ADJUSTMENTS OR REPAIRS MUST BE MADE AT shops other than authorized Studebaker dealerships, ask the repairman to refer to this section of your Owner's Guide to be sure that he understands the several "special-to-Studebaker" measurements and other service data given below.

### Ignition

Breaker point gap .....020" (0,508 mm.)  
(Check every 10,000 miles [16.093 km.] )

Breaker arm tension .....17 to 20 oz. (481,95 to 566,99 grams)

Spark plug gap .....022" to .027" (0,559 to 0,686 mm.)  
(Champion No. J-7 or J-9, 14 mm.)

Check after 5000 miles (8046 km.); replace after  
10,000 miles (16.093 km.)

Firing order .....1-5-3-6-2-4  
(No. 1 is the front cylinder.)

### Valves

Tappet clearance (engine cold) .....016" (0,406 mm.)

#### Intake and Exhaust

Angle of valve seat .....45°

### Engine Oil Pressure

40 miles (64 km.) per hour.....20 to 40 lb. (1,4 kgs. to 2,8 kgs.)  
reading on oil gage

Pressure at which relief valve opens.....40 lb. (2,8 kgs.)

### Shock Absorber

Do *not* adjust over 1/32" (0,79 mm.) at a time.

## Circuit Breakers and Fuses

	<i>Amperes</i>
Circuit Breaker — Head, Parking, Tail, and Instrument Lights .....	30
Circuit Breaker — Body and Stop Lights .....	15
Overdrive .....	20
Fog Lights .....	20
Climatizer and Defroster .....	20
Radio .....	14
Electric Directional Signal .....	14
Package Compartment .....	5
Underhood Light .....	5
Electric Clock .....	3

## Battery

Voltage .....6

Do not overfill. Check water level frequently.

Specific Gravity .....1.280-1.300 fully charged

Willard Number .....HW-1-100

## Brakes (Hydraulic)

Pedal free travel .....1/8" to 1/4" (3,16 to 6,35 mm.)  
(Before the master cylinder piston starts to move.)

## Clutch

Pedal free travel .....1/2" to 1" (12,7 to 25,4 mm.)

## Lamp Bulb Specifications

<i>Location</i>	<i>Voltage and Number</i>	<i>Candle Power</i>												
Headlight	6-8 Sealed Beam No. 4030													
<i>(For Right Hand Drive Use 45-20 Watt Metal Back Sealed Unit)</i>														
Parking	<table style="display: inline-table; vertical-align: middle;"> <tr> <td style="font-size: 3em; vertical-align: middle;">{</td> <td>6-8 Mazda No. 63 (Commander and Land Cruiser)</td> <td style="text-align: right;">3</td> </tr> <tr> <td style="font-size: 3em; vertical-align: middle;">{</td> <td>6-8 Mazda No. 55 (Champion)</td> <td style="text-align: right;">1-1/2</td> </tr> </table>	{	6-8 Mazda No. 63 (Commander and Land Cruiser)	3	{	6-8 Mazda No. 55 (Champion)	1-1/2							
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Tail } Stop }	6-8 Mazda No. 1158	<table style="display: inline-table; vertical-align: middle;"> <tr> <td style="font-size: 3em; vertical-align: middle;">{</td> <td style="text-align: right;">2</td> </tr> <tr> <td style="font-size: 3em; vertical-align: middle;">{</td> <td style="text-align: right;">21</td> </tr> </table>	{	2	{	21								
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License Plate	6-8 Mazda No. 63	3												
Tell-Tale	<table style="display: inline-table; vertical-align: middle;"> <tr> <td style="font-size: 3em; vertical-align: middle;">{</td> <td>Headlights</td> <td></td> </tr> <tr> <td style="font-size: 3em; vertical-align: middle;">{</td> <td>Directional Signal (2)</td> <td style="text-align: right;">1/2</td> </tr> </table>	{	Headlights		{	Directional Signal (2)	1/2							
{	Headlights													
{	Directional Signal (2)	1/2												
Directional Signal	<table style="display: inline-table; vertical-align: middle;"> <tr> <td style="font-size: 3em; vertical-align: middle;">{</td> <td>Front</td> <td>6-8 Mazda No. 1158</td> <td style="text-align: right;">21</td> </tr> <tr> <td style="font-size: 3em; vertical-align: middle;">{</td> <td>Rear</td> <td>6-8 Mazda No. 1129</td> <td style="text-align: right;">21</td> </tr> <tr> <td style="font-size: 3em; vertical-align: middle;">{</td> <td>Pilot</td> <td>6-8 Mazda No. 55</td> <td style="text-align: right;">1-1/2</td> </tr> </table>	{	Front	6-8 Mazda No. 1158	21	{	Rear	6-8 Mazda No. 1129	21	{	Pilot	6-8 Mazda No. 55	1-1/2	
{	Front	6-8 Mazda No. 1158	21											
{	Rear	6-8 Mazda No. 1129	21											
{	Pilot	6-8 Mazda No. 55	1-1/2											
Map	6-8 Mazda No. 88	15												
Package Compartment	6-8 Mazda No. 55	1-1/2												
Underhood	6-8 Mazda No. 55	1-1/2												
Fog Lamp	6-8 Mazda No. 4015A													
Radio	6-8 Mazda No. 44													
Clock	6-8 Mazda No. 55	1-1/2												
Cigar Lighter	6-8 Mazda No. 51	1/2												
Ash Tray	6-8 Mazda No. 51	1/2												

## Steering

Toe-in .....	1/16" to 1/8" (1,58 mm. to 3,16 mm.)
Caster .....	0° to +1° No Load
Camber .....	1/2° No Load
King Pin Inclination .....	5-1/2°

## Tire Pressures

5.50 x 15 .....	{ 30 lb. (2,10 kgs.) front 28 lb. (1,96 kgs.) rear
5.50 x 16 (extra cost) .....	
6.00 x 15 (extra cost) .....	{ 30 lb. (2,10 kgs.) front 28 lb. (1,96 kgs.) rear
6.00 x 15 (Station Wagon Only) .....	

Above pressures are with tires cool (local temperatures).

## Capacities

	U. S.	Imperial	Liters
Engine (Crankcase)	5 quarts	4.17 quarts	4,73
Cooling System	10 quarts	8.34 quarts	9,46
with Climatizer	11 quarts	9.16 quarts	10,41
Transmission —			
Conventional	1.5 pints	1.25 pints	0,71
Transmission and			
Overdrive	2.4 pints	2.00 pints	1,14
Rear Axle	2.5 pints	2.08 pints	1,175
<i>S.A.E. No. 90 Hypoid Lubricant — Summer and Winter.</i>			
Gasoline Tank	17 gallons	14.18 gallons	64,35

## License Data

Model Number .....	7G
Number of Cylinders .....	6
Cylinder Bore .....	3" (76,2 mm.)
Stroke .....	4" (101,6 mm.)
Piston Displacement .....	170 cu. in. (2785 cc.)
Horsepower (NACC or RAC Rating) .....	21.6
Weight — See your dealer. Weight varies by body style and special equipment. Your car's registerable weight is _____ pounds.	

## ANTI-FREEZE CHART

Cooling System Capacity 10 U. S. Qts.; 8.35 Imp. Qts.; 9,46 Liters  
Quantity of Anti-Freeze required for protection to temperatures indicated.

Degrees	C	
	F	C
+20		-6.7
+10		-12.2
0		-17.8
-10		-23.3
-20		-28.8
-30		-34.4
-40		-40.0
-50		-45.5

U. S. Quarts	Glycerine				
	Prestone	Thermo-Royal	Denatured Alcohol	Distilled Glycerine	G. P. A. Glycerine
2.0	2.0	2.0	2.0	2.5	3.5
3.0	3.0	3.0	3.0	3.5	5.0
3.5	4.0	4.0	4.0	4.5	6.0
4.0	4.5	4.5	4.5	5.0	7.0
4.5	5.0	5.0	5.0	5.5	8.5
5.0	5.5	6.0	6.0	6.0	10.0
6.0		6.5	6.5		
6.5		7.5	7.5		

Imperial Quarts	Glycerine				
	Prestone	Thermo-Royal	Denatured Alcohol	Distilled Glycerine	G. P. A. Glycerine
1.7	1.7	1.7	1.7	2.1	2.9
2.5	2.5	2.5	2.5	2.9	4.2
2.9	3.4	3.4	3.4	3.8	5.0
3.4	3.8	3.8	3.8	4.2	5.8
3.8	4.2	4.2	4.2	4.6	7.1
4.2	4.6	5.0	5.0	5.0	8.3
5.0		5.4	5.4		
5.4		6.3	6.3		

Metric Liters	Glycerine				
	Prestone	Thermo-Royal	Denatured Alcohol	Distilled Glycerine	G. P. A. Glycerine
1,9	1,9	1,9	1,9	2,4	3,3
2,8	2,8	2,8	2,8	3,3	4,7
3,3	3,8	3,8	3,8	4,3	5,7
3,8	4,3	4,3	4,3	4,7	6,6
4,3	4,7	4,7	4,7	5,2	8,0
4,7	5,2	5,2	5,2	5,7	9,5
5,7		6,2	6,2		
6,2		7,1	7,1		

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## THE 10-POINT PLEDGE TO DRIVE SAFELY

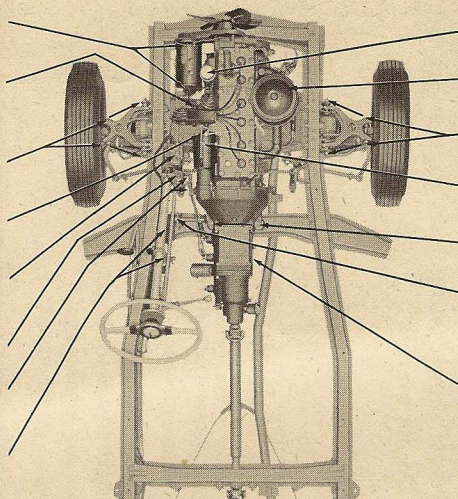
I pledge myself to —

1. **KEEP TRAFFIC "VENTILATED":** I will never overtake a car unless I am positive there is ample space ahead; that means, of course, never on a short curve or when approaching the crest of a hill.
2. **WATCH DANGER SPOTS:** I will slow down when approaching all intersections and be prepared to stop in any emergency.
3. **BE A GOOD SPORT:** I will slow down when approaching any pedestrian or bicyclist and be prepared for an unexpected movement.
4. **KEEP MY CAR SAFE:** I will always have my brakes and lights — in fact, the entire car — in a safe operating condition.
5. **OBEY SIGNS AND SIGNALS:** I will stop on red traffic signals, and wait until the light has turned green; I will come to a complete stop at all stop signs.\*
6. **BE A SAFE PARKER:** Before pulling from a parked position I will make certain no car is about to pass me from behind.
7. **AVOID THE DEADLY MIXTURE:** I will not drive if I have been drinking.
8. **BE ALERT ON SLIPPERY STREETS:** I will slow down to compensate for rain, snow or ice.
9. **SLOW DOWN AT SUNDOWN:** I will never "over-drive" my headlights.
10. **BE A DEFENSIVE DRIVER:** I always will be courteous and anticipate mistakes by other drivers; I will always drive at a speed which will permit me to have my car under complete control at all times.

\* A flashing red signal means the same as a stop sign; a flashing yellow signal, the same as a caution sign.

**KEEP THIS BOOKLET IN A CONVENIENT  
PLACE IN YOUR CAR. IT CONTAINS IMPOR-  
TANT INFORMATION ABOUT THE OPERATION  
AND CARE OF YOUR NEW CHAMPION.**

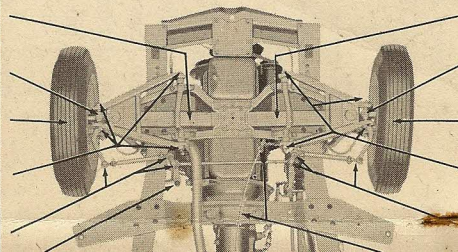
★		GENERATOR - 2 Oilers - SAE No. 20 Engine Oil
★		DISTRIBUTOR - SAE No. 20 Engine Oil on Felt Under Rotor. Small Amount of Vaseline on Cam. Wheel Bearing Lubricant in Grease Cup.
	★	UPPER CONTROL ARM BUSHINGS - 4 Fittings - Light Weight Chassis Lubricant
	★	THROTTLE CONTROLS - Engine Oil
	★	STEERING GEAR - Special Lubri- cant as Approved by Ross Tool and Gear Company of Lafayette, Indiana.
★		GEAR SHIFT CONTROL CASE - Remove Plug - Light Weight Chassis Lubricant
	★	GEAR SHIFT RODS - Engine Oil
	★	CLUTCH PEDAL LINKAGE - 2 Clevis Pins - Engine Oil



Lubrication Points - Top of Chassis

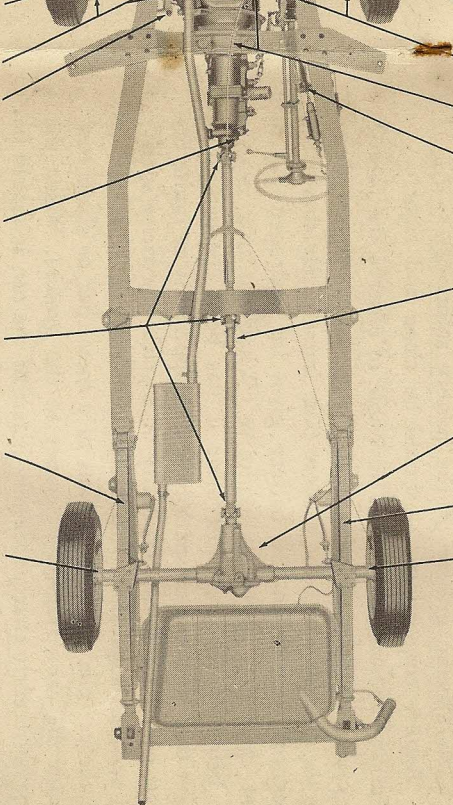
ENGINE OIL PAN FILLER TUBE - Check Oil Level When Purchasing Gasoline			
CARBURETOR AIR CLEANER - Service according to Instructions in Text.			
UPPER CONTROL ARM BUSHINGS - 4 Fittings - Light Weight Chassis Lubricant	★		
STARTER MOTOR - 1 Oiler - SAE No. 20 Engine Oil		★	
CLUTCH RELEASE SHAFT - 2 Oilers - Engine Oil	★		
CLUTCH OPERATING SHAFT BRACKET BEARING - Engine Oil	★		
TRANSMISSION - Conventional and Overdrive		★	
CHECK LEVEL			★
DRAIN AND FLUSH			★
LUBRICANT - SAE No. 40 Engine Oil or a High Grade Mineral Oil Gear Lubricant of SAE No. 90 Viscosity for Both Summer and Winter. Gear Lubri- cants Containing Any Extreme Pressure Ingredients, Such as Lead, Sulphur, or Chlorine Compounds Must Not Be Used.			

★	See *	SPRING LEAVES - Graphite Spring Lubricant
	★	STEERING KNUCKLE - 1 Fitting - Light Weight Chassis Lubricant
★		FRONT WHEEL BEARINGS - Wheel Bearing Lubricant
	★	LOWER CONTROL ARM BUSHINGS - 4 Fittings - Light Weight Chassis Lubricant
	★	TIE ROD BALL JOINTS - 3 Fittings - Light Weight Chassis Lubricant



SPRING LEAVES - Graphite Spring Lubricant	See *	★	
STEERING KNUCKLE - 1 Fitting - Light Weight Chassis Lubricant	★		
FRONT WHEEL BEARINGS - Wheel Bearing Lubricant			★
LOWER CONTROL ARM BUSHINGS - 4 Fittings - Light Weight Chassis Lubricant	★		
TIE ROD BALL JOINTS - 3 Fittings - Light Weight Chassis Lubricant	★		

	★	BUSHINGS - 4 Fittings - Light Weight Chassis Lubricant
	★	TIE ROD BALL JOINTS - 3 Fittings - Light Weight Chassis Lubricant
	★	AUXILIARY ARM BUSHING - 1 Fitting - Light Weight Chassis Lubricant
		CLUTCH RELEASE BEARING - No Lubricant Required
★		SPEEDOMETER CABLE - SAE No. 90 Gear Lubricant
	★	UNIVERSAL JOINTS - 3 Fittings - Light Weight Chassis Lubricant
	★	See * SPRING LEAVES - Graphite Spring Lubricant
★		REAR AXLE SHAFT BEARING - Wheel Bearing Lubricant
1,000 Miles (1.609 Km.)		
5,000 Miles (8.046 Km.)		
10,000 Miles (16.090 Km.)		



Lubrication Points - Bottom of Chassis

	★	BUSHINGS - 4 Fittings - Light Weight Chassis Lubricant	
	★	TIE ROD BALL JOINTS - 3 Fittings - Light Weight Chassis Lubricant	
	★	PARKING BRAKE LINKAGE - Spray - Engine Oil	
	★	CLUTCH AND BRAKE PEDALS - 1 Fitting - Light Weight Chassis Lubricant	
	★	PROPELLER SHAFT SPLINES - 1 Fitting - Light Weight Chassis Lubricant	
	★	REAR AXLE - CHECK LEVEL - DRAIN AND FLUSH - LUBRICANT - Use Studebaker Hypoid Lubricant or Any S.A.E. No. 90 Hypoid Lubricant Manufactured by a Reputable Oil Company. Do Not at Any Time Mix Various Brands of Hypoid Lubricants.	★
	See *	SPRING LEAVES - Graphite Spring Lubricant	★
		REAR AXLE SHAFT BEARING - Wheel Bearing Lubricant	★
1,000 Miles (1.609 Km.)			
5,000 Miles (8.046 Km.)			
10,000 Miles (16.090 Km.)			

The lubrication periods established are for average use and should be changed to suit individual operating conditions.

\* Springs equipped with lubrication fittings can be conveniently lubricated at the regular 1000 mile (1.609 km.) period.

## MINIMUM SEASONAL SERVICES

*Whether you live — and do most of your driving — in the North or in the South, your car will operate during the spring and summer months under totally different conditions from which it did in the fall and winter.*

*Because of this it is important that careful seasonal conditioning be given your car in the spring, after the colder, slower driving of winter, and again in autumn to prepare for the lower temperatures after six months of faster, hotter driving. Below are the minimum number of items which we recommend be checked each spring and fall.*

SPRING	FALL
<p><b>COOLING SYSTEM:</b> Drain and reverse flush. Check thermostat. ▼ Check condition of radiator hose and fan belt. ▼ Refill cooling system and install Rust Inhibitor.</p>	<p><b>COOLING SYSTEM:</b> Drain and reverse flush cooling and heating systems. ▼ Check entire system for leaks. ▼ Refill radiator with correct <i>anti-freeze</i> solution, including Rust Inhibitor if not contained.</p>
<p><b>CRANKCASE:</b> Clean inside of engine crankcase. ▼ Clean Floto screen. ▼ Change engine oil. ▼ Install new filter cartridge if not recently changed.</p>	<p><b>CRANKCASE:</b> Drain and refill crankcase with good oil of correct grade. ▼ Change filter cartridge if not recently changed.</p>
<p><b>BRAKES:</b> Check brakes for need of service.</p>	<p><b>BRAKES:</b> Check brakes for need of service.</p>
<p><b>STEERING:</b> Check wheel alignment (camber, toe-in, king pin inclination). ▼ Inspect all steering connections.</p>	<p><b>STEERING:</b> Check wheel alignment (camber, toe-in, king pin inclination). ▼ Inspect all steering connections.</p>
<p><b>GENERATOR:</b> Check generator output.</p>	<p><b>GENERATOR:</b> Check generator output.</p>
<p><b>BATTERY:</b> Test specific gravity of battery. ▼ Check water level. ▼ Clean, tighten, and coat terminals with vaseline.</p>	<p><b>BATTERY:</b> Test specific gravity of battery. ▼ Check water level. ▼ Clean, tighten, and coat terminals with vaseline.</p>
<p><b>CYLINDER HEAD:</b> Tighten cylinder head bolts.</p>	<p><b>CYLINDER HEAD:</b> Tighten cylinder head bolts.</p>
<p><b>LUBRICATION:</b> Chassis lubrication (unless performed in last 1000 miles) including any periodic lubrication requirements due.</p>	<p><b>LUBRICATION:</b> Chassis lubrication (unless performed in last 1000 miles) including any periodic lubrication requirements due.</p>
<p><b>FUEL SYSTEM:</b> Clean fuel pump bowl and reset carburetor adjustment if necessary.</p>	<p><b>FUEL SYSTEM:</b> Clean fuel pump bowl and reset carburetor adjustment if necessary.</p>
<p><b>STARTER:</b> Check efficiency for proper current draw from battery.</p>	<p><b>STARTER:</b> Check efficiency for proper current draw from battery.</p>

**HAVE CAR INSPECTED FOR ADDITIONAL SERVICES REQUIRED TO IMPROVE PERFORMANCE AND APPEARANCE.**  
*The above Spring and Fall seasonal service requirements will vary with the climatic zones in which your car is being operated.*

# INSTRUMENTS AND CONTROLS

REAR VIEW MIRROR

WINDOW VENTILATOR LOCK

HORN BUTTON

GEARSHIFT LEVER

WINDSHIELD WIPER AND  
WASHER CONTROL

HOOD RELEASE CONTROL

OVERDRIVE CONTROL

MAP LAMP SWITCH

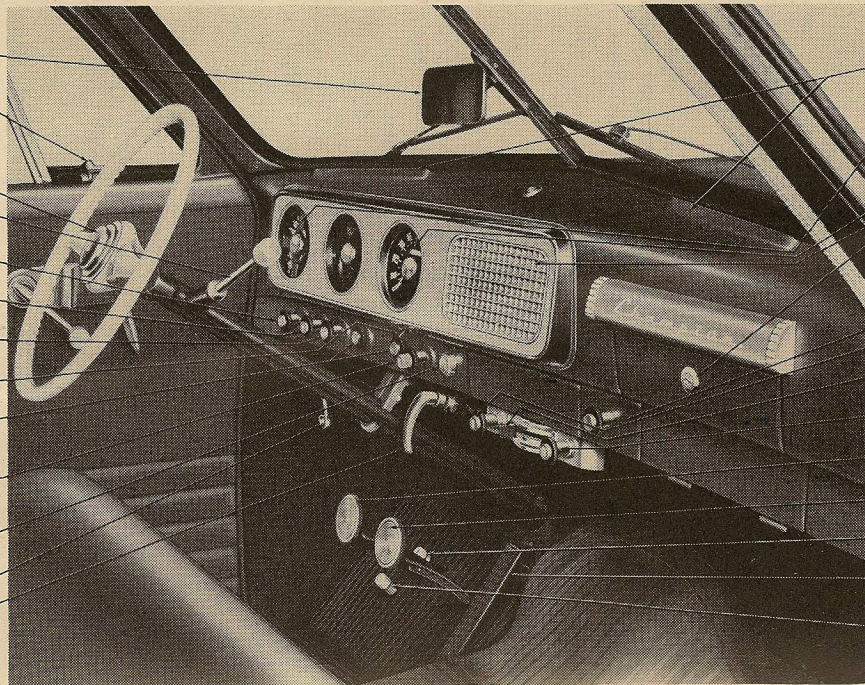
ACCESSORY BUTTONS

HEADLIGHT AND DASH LIGHT  
CONTROL SWITCH

IGNITION LOCK AND SWITCH

COWL VENTILATOR CONTROL

PARKING BRAKE LEVER



DEFROSTER VENTS

ENGINE OPERATION GAGES  
(HEAT-OIL-FUEL-AMPERES)

SPEEDOMETER

RADIO SPEAKER GRILLE

PACKAGE COMPARTMENT LOCK

ASH RECEIVER

DEFROSTER CONTROL

THERMO-CONTROL LEVER

FRESH AIR CONTROL

CLUTCH PEDAL

BRAKE PEDAL

STARTER SWITCH

ACCELERATOR PEDAL

HEAD LIGHT BEAM CONTROL

*The driver's compartment emphasizes visibility and access to all driving controls and instruments.*