



OPERATION and CARE

THE SPECIAL DICTATOR

THE STUDEBAKER SALES CORPORATION
OF AMERICA
SOUTH BEND, INDIANA

FOREWORD

To construct a sturdy, well-built, properly adjusted motor car is the business of the manufacturer.

To keep the car in that condition through regular inspection, lubrication and adjustment, which will be efficiently rendered by your authorized Studebaker service station, is the duty of the owner.

To furnish the necessary information to the car owner, that he may intelligently operate the car and have it cared for is the purpose of this booklet.

The service, life and satisfaction which is to be derived from your new Dictator Six depends, in a large measure, on the care and attention that it receives, especially during the first few thousand miles of operation. We cannot urge you too strongly, in your own interests, to follow with exactness the directions given in this booklet.

A Studebaker Dealer Service Policy is signed by the dealer and given to each purchaser of a new Studebaker car. This policy should be carefully read since under its terms the owner is entitled to certain privileges of which he should take advantage.

A Willard battery registration card is furnished at the time you accept delivery of the car. By having the battery registered through your local Willard service station the benefits of the Willard Service Policy may be secured. The Studebaker dealer from whom purchase of the car was made will be glad to handle this detail, if desired.

Patronize authorized Studebaker service stations for all maintenance and repair service. Their mechanics are factory-trained and are conversant with the construction, lubrication and adjustment of the car.

Appreciating the desire of many Studebaker owners for selective additional equipment to meet a particular need or individual taste, Studebaker has assumed the obligation of placing a carefully chosen line of accessories at their disposal.

Studebaker accessories are, therefore, exclusively designed for Studebaker cars. Our Engineering Staff, realizing the importance of continuous, satisfactory performance of our vehicles, have given painstaking attention to every detail of engineering design in the creation of the many desirable items of added equipment which your Studebaker dealer alone is in a position to make available to you, such as radios, heaters, electric clocks, special driving light and horn equipment, etc. You will be assured of the most satisfactory results by using only Studebaker engineered accessories of this general character.

Permit only the installation of genuine Studebaker replacement parts. In many instances, similar appearing parts may be purchased from other sources. However, only by purchasing Studebaker parts can you be assured that the material used and heat treatment applied is the same as the original part. All Studebaker parts are manufactured with the same care and precision exercised in the production of parts from which your car was constructed. All parts should therefore be purchased from an authorized Studebaker dealer who, in turn, secures his parts requirements from our Parts and Accessories Division at South Bend or from any of the factory parts depots which are located at strategic points about the country.

LICENSE DATA

| | |
|---|--------------------------------------|
| Number of Cylinders | 6 |
| Cylinder Bore | 3 1/4 inches (82.55 mm.) |
| Stroke | 4 1/8 inches (104.77 mm.) |
| Piston Displacement | 205.3 cubic inches (3364.29 cu. cm.) |
| Horse Power (N.A.C.C. Rating) | 25.35 |
| Engine Number - stamped on left center of engine block above ignition distributor. | |
| Serial Number - stamped on plate attached to chassis frame side member under left front fender. | |
| Body Number - on plate attached to left side of dash under the hood. | |
| Weight - specific information on any model can be obtained from the dealer. | |
| Key Number - make a note of your key number for future reference. | |

OPERATION

The Studebaker dealer organization from whom the car was purchased will be glad to arrange for any necessary personal instruction in the art of driving. Even the experienced driver, however, should familiarize himself with the location of all the instruments and controls of the new car before an attempt is made to operate it. Your dealer will also be glad to personally explain the several controls in detail but as a matter of ready reference they are being outlined in the following paragraphs.

Throttle Control Button and Foot Accelerator

The throttle control button is located on the instrument board directly above the ignition switch and to the right of the instrument panel. This control button is marked "T" and controls the engine speed and may be used to vary the speed of the car. It is fully closed when in the extreme forward position.

Ordinarily, the throttle button is left in the closed position and the engine speed is controlled by the foot accelerator which is located on the toe board at the right of the brake pedal. The foot accelerator is returned by a spring to the degree of throttle opening at which the throttle button is set.

Care must be taken, in using these controls, not to race the engine, especially with the clutch disengaged or the transmission in neutral position. Considerable harm or damage can be done to the engine in this way.

Ignition Coil Lock

At the lower right side of the instrument panel, directly underneath the throttle control button, is the ignition switch which serves the combined purpose of ignition switch and lock. It is operated by means of a key which, when turned to the right or left, supplies current to the ignition system and to operate the gasoline gauge. The ignition key should always be turned off (vertical position) and removed when leaving the car.

Starter Control

The starter motor is controlled by a button located on the instrument board at the upper left corner of the instrument panel and is marked "S". The starter button, when pulled out, closes a switch which completes the electric circuit operating the starter motor.

Care must be used not to pull this control button out while the engine is running, as serious damage may result to the starter or flywheel gear. As soon as the engine starts, the starter gear is automatically thrown out of mesh and the control button must then be released. In case the engine, when starting, fires a few times and then stops, be sure the button is not again pulled out until the engine comes to rest.

Carburetor Choke

The carburetor choke is controlled by a button, located on the driver's side of the instrument board, which is marked "C". It is used as an aid to starting and, as such, is indispensable.

Starting the Engine

Before attempting to start the engine be sure that the gear shift lever is in the neutral or central position. In severe winter weather the clutch pedal should also be fully depressed before starting.

Set the throttle control button to approximately one-fourth open position or hold the foot throttle slightly open.

Pull the choke control button "C" all the way out if the engine is cold.

Insert the ignition key and turn it to the extreme right or left position.

Seat Regulator

At the side of the front seat and on the top of the cushion retainer is a seat regulator control. Pressing down on the button releases the lock mechanism and permits the shifting of the seat forward or backward. When the regulator button is released the seat mechanism is locked in that position.

Brake Controls

The parking hand brake lever, located at the extreme side of the front compartment applies the parking brake. This lever actuates all four brakes and its purpose is to hold the car after it has been brought to a stop. Care should be taken that this lever is in the extreme forward position when the car is being driven. Otherwise, the brakes will drag and overheat.

The foot brake or service brake pedal is located at the right of the steering column. Depressing this pedal applies the four wheel brakes at times when the motion of the car is to be retarded or stopped. The retarding action is directly proportional to the amount of pressure applied on the pedal.

Excessive movement of either the foot pedal or hand brake lever before actuation of the brakes is obtained, a condition of brake "squeal" or an unusually hard pedal are indicative of maladjustment of the brakes. An emergency brake adjustment may be made as outlined on page 13, but ordinarily it will be preferable to have this service performed by an authorized Studebaker service station.

The skilful driver will anticipate fully 95% of the necessary stops sufficiently in advance so as to obviate an emergency application. If these harsh and unnecessary applications of the brake are avoided, their life will be considerably prolonged.

Clutch Pedal

The clutch pedal is located at the left of the steering column. When the pedal is depressed the clutch is released, allowing the engine to turn freely. It is harmful to drive the car with the foot resting on the clutch pedal or to slip the clutch while in traffic, or when standing on a grade awaiting traffic signals. The clutch parts will become prematurely worn if this practice is continued.

The clutch pedal at all times should have a minimum of one inch (25.4 mm.) free travel from the floor board before the resistance of the release mechanism can be felt. If this free travel does not exist, clutch slippage will occur which destroys the clutch mechanism. Have this pedal lash checked occasionally, and the necessary adjustment made by your Studebaker dealer.

Transmission and Gear Shift Controls

The transmission is of the conventional type, having the synchro-mesh feature and quiet helical cut constant mesh gears. These features insure freedom from gear clash when shifting into second or high gear and also quiet operation in both of these positions.

The gear shift lever, clutch pedal and foot accelerator have a very definite relation to each other, and quite frequently must all be operated together.

Never move the gear shift lever from the neutral or central position without first completely depressing the clutch pedal.

The relative order of the gear shifting positions is:

| | |
|--|--|
| Reverse - To the left and forward | Second gear - To the right and forward |
| | Neutral |
| Low gear - To the left and to the rear | High gear - To the right and to the rear |

Shifting Gears

Low or First Gear - Starting the Car

Release the parking brake by pressing the release at the top of the lever and moving the lever forward.

Completely depress the clutch pedal.

Move the gear shift lever from neutral to the left and back.

Slowly release the pressure on the clutch pedal and at the same time gradually increase the engine speed by pressing down on the foot accelerator.

Accelerate and run the car at from eight to twelve miles per hour.

Second Gear - Shifting from First to Second

Disengage the clutch and at the same time release the foot accelerator. While the car is thus in operation, move the gear shift lever forward into second gear. Slowly release the pressure on the clutch pedal and again, at the same time increase the engine speed by gradually pressing down on the foot accelerator. Accelerate the engine to gain car momentum.

High Gear - Shifting from Second to High

Disengage the clutch and at the same time release the foot accelerator. While the car is moving, pull the gear shift lever straight back into the high gear position.

Then engage the clutch gradually and accelerate to the desired car speed.

Shifting from High to Second Gear

Shifting from high to second gear ordinarily should not be attempted at road speeds in excess of twenty miles per hour. If possible, this shift should also be made before the actual necessity arises in order to prevent stalling the engine. Disengage the clutch and at the same time momentarily accelerate the engine slightly. Push the gear shift lever straight forward into the second gear position and engage the clutch.

Shifting from Second to First Gear

The necessity for shifting from second to first gear, while the car is in operation, will seldom be encountered even when descending relatively steep grades. Ordinarily this shift should not be attempted at road speeds in excess of 8 or 10 miles per hour and the double clutching operation described in the following paragraphs should be used.

Release the foot from the accelerator and disengage the clutch. At the same time move the gear shift forward to the neutral position.

Engage the clutch and accelerate the engine slightly.

Disengage the clutch and immediately place the gear shift lever into first gear position and gradually re-engage the clutch.

To Stop the Car

Disengage the clutch and release the foot from the accelerator. At the same time apply pressure on the brake pedal sufficient to bring the car to a gradual stop. Move the gear shift lever to the neutral position. The clutch may now be engaged. If the car is to be "parked", the parking brake should be firmly applied, the ignition switch turned off and the key removed.

To Reverse the Car

First, completely stop the car.

Disengage the clutch.

Move the gear shift lever to the left and forward.

Gradually engage the clutch and accelerate the engine as heretofore outlined for forward speeds.

Unusual caution should be used in backing until you become familiar with the action of the car.

Descending a Hill

In descending a steep or dangerous hill, release the foot from the accelerator and utilize the braking effort of the engine in retarding the car speed. When descending exceptionally steep hills, it is advisable to change to second gear, or even to low gear, and in this manner obtain greater braking action from the engine. Always leave the ignition switch on and do not use the brake more than is absolutely necessary.

Stopping on a Hill

Stop the car in the usual way and apply the parking brake firmly.

Turn the front wheels in to a position where, if the car should move, it would go to the side of the road.

On very steep hills it is advisable, as an added precaution, to block the wheel.





Starting on a Hill

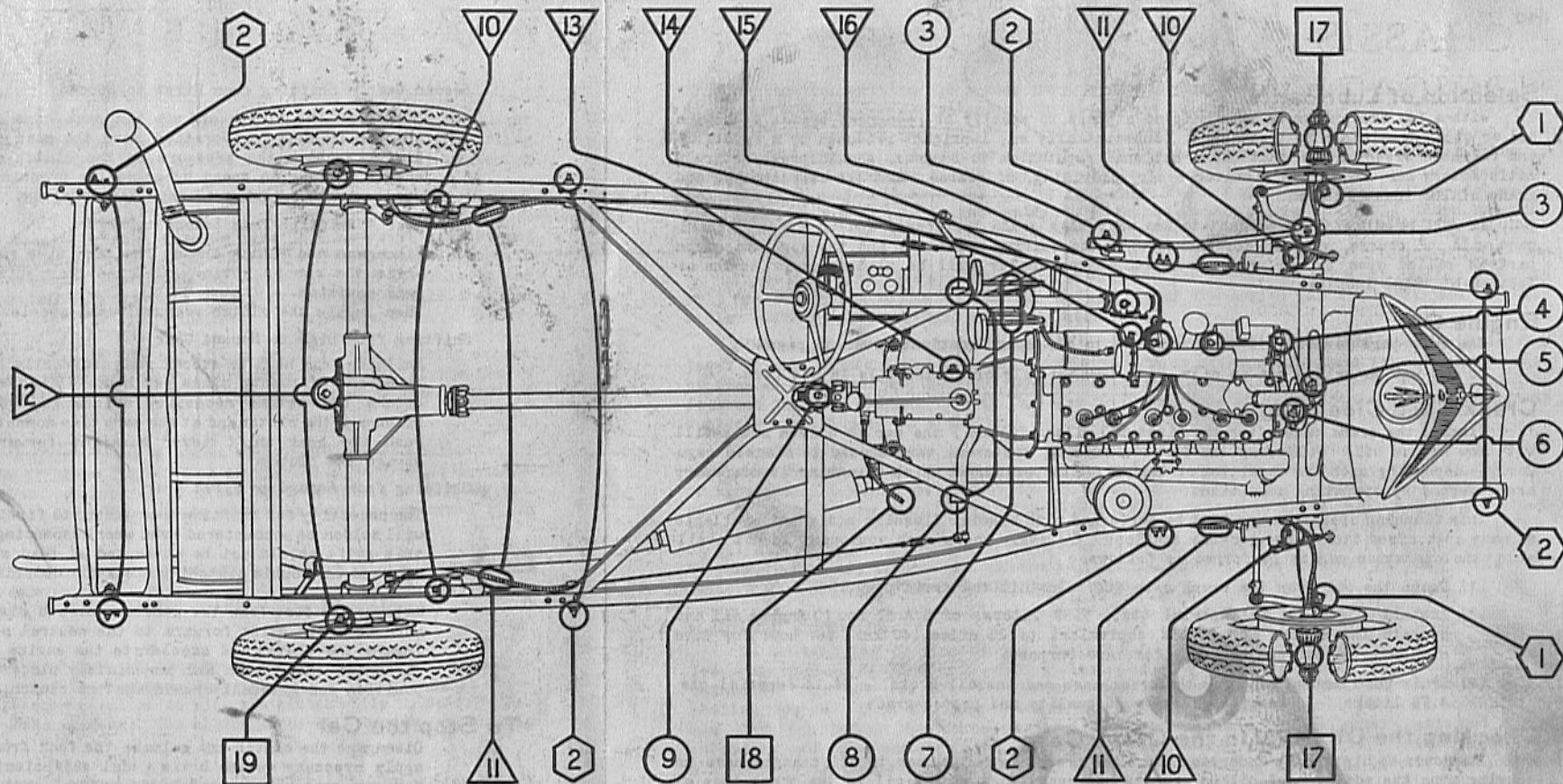
Disengage the clutch and shift into low gear.

Let the clutch in slowly, at the same time accelerate the engine with the foot accelerator and gradually release the parking brake.

CHASSIS LUBRICATION CHART

Chart can best be used by first referring to the numerals in the copy. Next prepare lubricating material and equipment. All points with the same numerals should then be located on the diagram and lubricated before proceeding to the next lubrication point.

-  Every 1000 miles (1600 Km.)
-  Every 2500 miles (4000 Km.)
-  Every 5000 miles (8000 Km.)
-  Every 10000 miles (16000 Km.)



By keeping the mechanism of the car as clean as possible, also free of accumulations of road dust and dirt, a longer period of service from the working parts will be obtained. A program of regular and periodic lubrications will greatly aid in assuring freedom from trouble.

The mileage intervals established in the accompanying lubrication table and chart are the maximum permissible intervals between lubrication periods. However, types of car service vary widely and may dictate a reduction in these mileage intervals. We therefore suggest that the specific recommendations of your local Studebaker dealer be followed in this respect. Unquestionably he is familiar with the type of operation to which your car is subjected and is well qualified to establish definite mileage intervals for the several points of lubrication.

Points Requiring Lubrication Every 1000 Miles (1600 km.)

- 1 **Steering Knuckle** Lubricate through grease gun nipples with a gear lubricant, S.A.E. No. 110 (4 places).
- 2 **Spring Bolts and Spring Shackles** Lubricate through grease gun nipples with a gear lubricant, S.A.E. No. 110 (12 places).

Points Requiring Lubrication Every 2500 Miles (4000 km.)

- 3 **Steering Reach Rod** Lubricate through grease gun nipples with pressure gun grease. (2 places).
- 4 **Generator** Place not more than from two to four drops of S.A.E. No. 20 engine oil in the oil cups at each end of the generator. (2 places).
- 5 **Fan** Fill the reservoir with S.A.E. No. 30 engine oil. (1 place).
- 6 **Water Pump** Fill the oil cup with an S.A.E. No. 30 engine oil. (1 place).
- 7 **Pedals and Linkage** Spray with oil.

- 9 **Propeller Shaft Splines** Lubricate with pressure gun grease. (1 place).

Points Requiring Lubrication Every 5000 Miles (8000 km.)

- 10 **Shock Absorbers** Remove the filler plug and disconnect the link at the axle. Completely fill the unit with Delco-Lovejoy shock absorber fluid, working the shock absorber arm up and down as the filling progresses to eliminate air pockets in the instrument. Install the filler plug. (4 places).
- 11 **Brake Cables** Clean the exposed portion of the cable. Disconnect the conduit at the brake backing plate and move the conduit back to expose the portion of the cable normally covered. Apply Greedag 213 1/2 to the cable and replace the conduit. (4 places).
- 12 **Rear Axle** Inspect for lubricant requirements and, if necessary, fill to the level of the filler plug opening with gear lubricant (S.A.E. No. 90 for winter and S.A.E. No. 110 for summer).
- 13 **Transmission** Inspect for lubricant requirements and if necessary, fill to the level of the filler plug opening with a Free Wheeling lubricant that meets the specifications given on page 16.
- 14 **Starter Motor** Place a few drops of engine oil, S.A.E. No. 20 in the oil cup. (2 places).
- 15 **Steering Gear** Fill through the grease gun fitting to the level of the pipe plug with one of the following lubricants: Mobiloil grease, Whitmore's No. 65 (summer) Whitmore's No. 70 (winter), Gargyle Gear Compound, Standard Oil Co. of Indiana special Steering Gear Grease No. 20, Ross special Steering Gear Lubricant, Sunoco special Steering Gear Lubricant (light grade for winter and heavy for summer) and Elco No. 10.
- 16 **Ignition Distributor** Remove the distributor cover and rotor. Place from two to four drops of S.A.E. No. 20 engine oil on the exposed wick. Lubricate the distributor shaft bearings with a few drops of S.A.E. No. 20

Points Requiring Lubrication Every 10,000 Miles (16000 km.)

- 17 **Front Wheel Bearings** Remove the wheel bearing cones, and clean and pack only the bearings with wheel bearing grease. Replace the wheels and adjust the bearings. Do not fill or pack the hubcaps with grease. (2 places).
- 18 **Speedometer Cable** Remove from conduit and lubricate with S.A.E. No. 90 gear oil.
- 19 **Rear Wheel Bearings** Lubricate sparingly through the grease gun nipple with wheel bearing grease. (2 places).

Miscellaneous

- Door Strikers, Dovetails** Lubricate as needed with a special dry lubricant. Wax, paraffine or castor oil may be used when the special lubricant is not available.
- Hood Hinges, Hood Locks, Etc.** Lubricate with two or three drops of engine oil as needed.
- Window and Door Glass Runs** Lubricate as needed with dry graphite, such as that available in pencil form.
- Hood Lacings** Apply a dry flake or ground graphite lubricant as needed.
- Fan Belt** In the event of fan belt squeak, soapstone or tire talc can be applied. The belt should, of course, be properly adjusted as this in itself will ordinarily eliminate belt noise.
- Universal Joints** Disassemble, cleanse and repack with a light cup or pressure gun grease at 20,000 mile (32000 km.) intervals.
- Front and Rear Springs** It is recommended that the chassis springs be lubricated with Dixon's XP-201 graphite grease at 10,000 mile (16000 km.)

Selection of Lubricants

With a few exceptions we have made no attempt to specify or recommend brands of engine oil or other lubricants by trade name. Substantially any lubricant produced by a reputable and reliable organization that has a national reputation to sustain, should prove entirely satisfactory for use in the Dictator 6 car, providing, of course, that the correct type and grade of lubricant is used.

It will be a paying investment to use only high grade lubricants and the type of lubricant will, of course, vary in accordance with the bearing materials and the work which the part is called upon to perform. Your Studebaker dealer will be glad to assist in the selection of these lubricants.

Engine Oil

Use only pure mineral oil that conforms to the specifications given on page 16.

Do not use so called run-in oils, germ treated oils or castor oils in any form.

Crank Case Cleansing

Cleanse the crank case after the first 500 miles (800 km.) the car is driven and refill with new engine oil. Following the first cleansing, the crank case should be cleaned regularly - depending upon the condition of the oil. The periods at which cleansing is necessary are governed by operating conditions.

This flushing operation can best be performed with special flushing equipment available at many authorized Studebaker service stations. However, where such equipment is not available, the operation can be performed as follows:

- (1) Drain the oil from the crank case and reinstall the drain plug.
- (2) Install 2 qts. (1.66 imperial qts., 1.89 liters) of S.A.E. No. 10 engine oil and operate the engine at a speed equivalent to 25 miles (40 km.) per hour for five minutes. Do not use kerosene for this purpose.
- (3) Drain the flushing oil from the crank case and install 5 qts. - (4.14 imperial qts. 4.73 liters) - of engine oil of good quality and proper grade.

Checking the Oil Level in the Crank Case

It should be distinctly understood that the preceding references to oil changes have no bearing upon the addition of oil in amounts necessary to keep the oil in the crank case at the proper level, as shown by the bayonet gauge on the left side of the engine. This should be regularly inspected by gasoline station attendants when gasoline is purchased.

How to Avoid Oil Dilution and Sludge Formation

The crank case in the Dictator 6 is provided with a cross ventilating system to reduce harmful dilution of the engine oil by water and fuel. However, the car operator can materially assist in preventing harmful dilution by observing the following suggestions:

- (1) After starting, give the engine time to "warm-up" before driving.
- (2) Avoid idling the engine or driving at extreme slow speeds for long periods of time.
- (3) Keep the engine in good mechanical condition. See that the compression is good, that the ignition system is functioning properly and that the carburetor is properly adjusted.
- (4) Flush the crank case when necessary during the winter months.
- (5) Use only the proper grade of a high quality engine lubricant.
- (6) Use only a good grade of gasoline.

An engine operating at subnormal temperatures acquires dilution much more rapidly than one operated at normal temperatures because the fuel vapors that find their way into the crank case are immediately condensed and are not expelled while still in vapor form.

These fuel vapors are a product of combustion and are composed of hydrogen and oftentimes contain some sulphur dioxide or other gases which, if allowed to condense, are very harmful to the internal parts of the engine. Since there is no simple test which will show whether or not any harmful compounds are present in the fuel before it is used, the safest course is to purchase only such fuels as experience has shown to be harmless and to further prevent crank case dilution by adhering to the above suggestions.

Air Cleaner

The Dictator 6 is equipped with a carburetor air cleaner and air intake silencer assembly.

This combination unit serves a dual purpose of cleaning the air prior to its entrance into the combustion chamber and silencing the air intake noises which are usually prevalent where some provision is not made for muffling these noises.

The silencer will require no attention but the servicing of the cleaner is of prime importance. The importance of this service may be appreciated when one stops to realize that for each gallon of fuel consumed 1200 to 1300 cubic feet of air passes through the carburetor and further, to visualize the dust particles contained in this volume of air. If their entrance into the combustion chamber is to be prevented the air cleaner must be functioning properly at all times.

These dust particles are highly abrasive and proper servicing of the air cleaner assembly will materially add to the normal and useful life of the engine parts, namely, the cylinder walls, pistons, piston rings, bearings, etcetera.

Because of the various types of operation to which a car may be subjected it is impractical for the manufacturer to specify definite time or mileage intervals for the performance of cleaner service. However, the recommendations of your local Studebaker dealer should be followed in this respect. He is familiar with the type of operation to which your car is subjected and will be in a position to specify these mileage or time intervals.

Servicing the cleaner is a very simple operation and can be accomplished by the owner in a few minutes time. Remove the cleaner and wash the treated fibre element in gasoline or kerosene. It should be allowed to dry after which it is to be completely submerged in a good grade of engine oil. Permit the excess oil to drip from the cleaner before reinstallation on the silencer. The effectiveness of this cleaner element is dependent upon a film of oil surrounding the treated fibre and it is not sufficient to clean it only, but it must be submerged in oil thereafter. Do not neglect the servicing of this unit. Many Studebaker dealers will perform this service without charge.

Cooling System

To protect the cooling system (radiator, engine block, cylinder head and water pump) from the action of lime and other minerals usually present in artesian water, it is recommended that the one pint of Eveready Rustone supplied with the car be placed in the cooling system. This Eveready Rustone is furnished gratis and will serve as an inhibitor and thus neutralize the normal action of these minerals on the metal parts and retard corrosion and lime accumulation. This, in turn, assures proper cooling and provides freedom from cooling system difficulties in addition to increasing the useful life of the radiator.

If the cooling system is drained after the introduction of the inhibitor, it will be necessary, of course, to salvage the water or to reinstall a pint of Eveready Rustone when the system is again filled.

Never introduce cold water into the cooling system when the engine is unusually hot, as the sudden and extreme temperature change which thus occurs may result in cracking the engine block or cylinder head. In the event the engine is warm it should be operated at slightly above idle speed when water is being added to the cooling system.

Cooling System Cleaner

If the use of the cooling system inhibitor is discontinued, it will be necessary to periodically drain and flush the cooling system. This work should be performed by an authorized Studebaker Service Station. Use only the radiator cleaner or solvent recommended by your Studebaker dealer, prior to the flushing operation. Under no circumstances should a cleaner containing caustic soda or other alkaline solutions be used.

Anti-Freeze Solution

In freezing weather the water in the cooling system should be replaced with an anti-freeze mixture. However, a solution containing corrosive chemicals must not be used, due to their detrimental effect on the cooling system. Prestone, denatured alcohol, and G.P.A. Glycerine have been found to be satisfactory and are quite readily obtainable.

If alcohol is used, it is advisable to use an inhibitor or rust preventive, such as Eveready Rustone. An inhibitor is already incorporated in the Eveready Prestone and also the G.P.A. Glycerine.

If an alcohol anti-freeze solution is used it must be periodically tested and a sufficient quantity of alcohol added to compensate for any loss that may have occurred through evaporation. With the use of alcohol it is also necessary that care be taken not to spill any of the solution on the lacquered surfaces, as the alcohol may cause bleaching or spotting of the finish.

If G.P.A. Glycerine or Eveready Prestone is used, there will be no loss due to evaporation, but it is important that all hose connections, cooling system gaskets, etcetera be kept tight, as these solutions may leak where water will not.

The following tables indicate the correct mixture of the various anti-freeze solutions for the temperatures indicated.

Dictator - Model A - Capacity, 16 Quarts

| Anti-Freeze | Quarts of Anti-Freeze Required for Protection To: | | | | | | | |
|-----------------------------------|---|-------|-----|-------|-------|-------|-------|-------|
| | +20°F | +10°F | 0°F | -10°F | -20°F | -30°F | -40°F | -50°F |
| Eveready Prestone | 3 | 4 | 6 | 7 | 8 | 8 | 9 | 10 |
| G. P. A. Radiator Glycerine | 5½ | 8 | 10½ | 12 | 14½ | 16 | ... | ... |
| Denatured Alcohol | 3 | 4½ | 6 | 7 | 8 | 8½ | 9½ | 10½ |
| Distilled Glycerine | 3½ | 5½ | 6½ | 7½ | 8½ | 9½ | 11 | 12 |

Draining Cooling System

If an anti-freeze solution is not used it will be necessary to drain the cooling system whenever freezing temperatures are anticipated.

To drain the system: Open the pet cock located in the radiator outlet pipe (lower right rear corner of radiator) and also remove the pipe plug from the cylinder block which is located in the lower left rear corner of the block water jacket. Be sure to remove this latter plug, as the cooling system cannot be completely drained by opening the radiator pet cock alone. Failure to remove the cylinder block plug may result in freezing and consequent breaking of the block.

Cold Weather Suggestions

- (1) In cold weather it is particularly advisable to completely depress the clutch pedal before starting the engine. By so doing the starter motor is relieved of additional load resulting from rotation of the transmission gears in the congealed (semi-solid) lubricant.
- (2) Use the starter motor as little as possible. In cold weather the battery is not as efficient as in warm weather.
- (3) Test the battery frequently and see that it is kept fully charged. A partially charged battery will freeze much quicker than if fully charged.
- (4) Allow the engine to "warm up" somewhat before driving. It should not be raced at any time.
- (5) Use a light cold test oil and change it frequently (see page 16).
- (6) Use an anti-freeze solution in the cooling system.
- (7) Do not race the engine in starting the car on a slippery pavement but rather, run the engine slowly and engage the clutch gradually.

Care of Car Finish

The utmost care has been taken and the best of materials have been used in producing the car finish. However, by reason of the fact that this finish is exposed to the elements a disintegrating process occurs as soon as the car is placed in service. This may be retarded to a very pronounced extent by periodically protecting the finish with Royal Saxon Glaze or Studebaker Wax which may be obtained from any authorized Studebaker dealer. Royal Saxon Glaze is somewhat more easily applied and affords somewhat longer protection than does the wax.

If Royal Saxon Glaze is used it should be applied when the car is new and every three months thereafter in cold weather and every six to eight weeks in extremely hot weather. By following this procedure it will not be necessary to pre-clean (other than washing) the car finish prior to the application of the Saxon Glaze except in those cases where the car finish has been subjected to road tar, grease, etc.

When washing the car, all foreign substances on the car finish should first be thoroughly saturated with water and then a clean sponge in connection with running water should be used for the removal of dirt. Dry the body with a clean, damp chamois skin - using a straight motion from side to side or up and down, rather than a circular motion. It is essential that the sponge and chamois skin be free from any grit or grease. Separate sponges and chamois skins should be used on body and chassis.

It is not advisable to wash the car while it is standing in the hot sun or while the engine hood is hot. The water dries too rapidly under these conditions and tends to leave spots and streaks.

Chromium and nickel plated finishes, being of a perishable nature, will deteriorate rapidly if not properly cared for. These parts should be kept clean and free from dirt and foreign matter. For cleaning chromium plated parts either clear water and a clean cloth or Studebaker chromium cleaner should be used. After the parts are cleaned it will be well to protect the finish by rubbing with a clean cloth that has been lightly saturated with oil.

Tire Pressures

The tire size is 17x5:50. They should be inflated to 35 pounds (2.461 kgs.) pressure - both front and rear. The pressure should be checked at frequent intervals.

To obtain maximum life and uninterrupted service from the tires it is necessary to keep them inflated to the proper pressure at all times. If they are over-inflated it will tend to cause hard riding and subject the body and chassis to unusual and unnecessary road shocks. If the tires are under-inflated, very rapid wear of the tire tread will result (especially on the inner and outer shoulders). It will further cause abnormal heat to be generated in the tire carcass with consequent premature failure and is also highly conducive to most types of steering disturbance.

Brake Adjustment

Brake shoe and linkage adjustment, when required, should be performed by an authorized Studebaker service station. In emergency, however, the following instructions may be used and these operations should be applied in the same sequence in which they are given:

- (1) With the manual control of the brakes in the fully released position and the car elevated on jacks, loosen the brake cable clevis jamb nut and, holding the ferrule from turning, adjust the clevis rod (short rod) until 1/16" (1.587 mm.) clearance between the end of the shoe and anchor pins obtained. This may be observed through the inspection hole in the brake drum. This adjustment must be the same on all four wheels.
- (2) Loosen the centralizing cam lock nut on the outside of the brake backing plate. Turn the cam until there is a slight drag, then carefully back off until the wheel is just free.
- (3) Block the foot pedal down to within three inches (76.199mm.) of the toe board and swing the adjusting screw cover on the backing plate over to one side. Turn the shoe adjusting screw until a heavy drag is encountered when turning the wheel by hand in the forward direction of rotation. This drag must be the same on all four wheels. The wheels should turn freely when the brake pedal is released and should be properly equalized.

General Maintenance

The service that you receive from your Dictator 6 depends, in a large measure, on the care and precision exercised in its maintenance and upon following a regular preventive maintenance program. The purchase of the car represents a definite investment in transportation and it is short-sighted economy to pursue a corrective rather than a preventive program.

Studebaker has prepared a plan, known as Studebaker Preventive Service, whereby the owner is offered a regular service of this kind at a minimum expense and with the least possible inconvenience to him. This plan, which has been adopted by many Studebaker dealers, includes a thorough lubrication with the proper oils and greases, and a careful examination of the car according to factory recommendation.

In localities where this regular plan is not used, every owner should contact with his Studebaker dealer and arrange for a regular maintenance program - one based on lubrication, examination and adjustment of the car at pre-determined intervals. In this way the owner will not only avoid unnecessary expense but will also be assured of performance, comfort and continuous driving pleasure from his car at all times.

There are many adjustments about the car which should be checked at definite mileage intervals such as, valve tappet clearance, ignition system, carburetion, clutch pedal lash, brakes, etcetera. These adjustments are provided as a ready and economical means of compensating for wear and other changes that are certain to occur as mileage is accumulated.

Failure to make these adjustments results in the necessity of the performance of corrective work, which is always expensive. For instance: if the valve tappet clearance is permitted to become less than that specified in the specification table on page 15, then the valves cannot properly seat and the burning gases are forced between the valve and seat and result in burning and pitting of the valves and seat. Further, by virtue of the fact that the valve does not come into physical contact with the seat, the heat is not dissipated and the valve is still further burned and warped. This condition therefore would create the necessity of a valve reconditioning job at unusually and unnecessarily early mileage. The checking and necessary readjustment of the valve tappet clearance will prevent having to follow a program of this kind.

In your own interest we cannot urge too strongly that you discuss these matters with your Studebaker dealer and arrange for the necessary lubrication, inspection and adjustments to be performed in accordance with the Studebaker Preventive Service Plan.

Emergency Corrective Measures

It may occasionally occur that emergency or road side repairs are necessary when an experienced dealer's mechanic cannot be reached. The vast majority of such occurrences can be avoided through systematic and periodic inspections of your car at your dealer's service station. However, in the event that such emergency or roadside repairs are made, it is very important that the car be taken to an authorized service station at the first opportunity, as such repairs are usually only temporary. The following suggestions cover some of the most common emergencies and should be given first attention in each particular group.

(1) Starting Motor Does Not Revolve When Starter Button is Pulled Out

Cause: Broken connection at battery or starter switch.

Inspect all cables leading from battery and starter switch and tighten or replace.
Cause: Battery discharged.

Turn on bright lights and pull out starter button. If lights dim considerably or go out, battery is discharged and should be recharged.

(2) Engine Stops or Will Not Start

Cause: Lack of ignition current.

Turn on ignition switch. Ammeter needle will flicker if current is reaching ignition unit properly. If needle does not flicker, look for loose or broken connections at ignition coil or ignition distributor.

Cause: Lack of fuel.

Examine gas level in tank.

Check for broken gasoline pipes and loose connections at fuel pump or carburetor.
Examine gasoline filter screen to see that it is not clogged with dirt.

Cause: Spark plug points fouled or burned.

Remove plugs and clean and set points to not more than .025" (.635 mm.) GAP.

(3) Engine Overheats

Cause: Lack of water in cooling system.

Add water to radiator as necessary.

Cause: Slipping fan belt.

Adjust fan belt.

Cause: Too much alcohol in radiator.

Drain a little alcohol and add water.

Cause: Insufficient amount of oil in engine.

Remove oil depth gauge from left side of engine and check oil level. If oil is low drive slowly until oil can be obtained.

Cause: Sediment in radiator.

Have cooling system thoroughly flushed out.

(4) One of Several Lamps Do Not Light or Flicker

Cause: Loose or broken connections at lamp socket.

Examine wire connections at lamp socket and see that lamp bulb is tight in socket.

Cause: Lamp bulb filament burned out.

Replace lamp bulb with new one.

ENGINE SPECIFICATIONS - GENERAL

| | |
|--|--|
| Number of crankshaft main bearings | 4 |
| Diameter of crankshaft main journals | 2.2495" to 2.2500" (57.14 to 57.15 mm) |
| Recommended main bearing clearance | .0015" to .002" (.038 to .051 mm) |
| Recommended crankshaft end play | .003" to .006" (.076 to .152 mm) |
| Number of cam shaft bushings | 4 |
| Recommended cam shaft bushing clearance | No. 1 .00075" to .00225" (.019 to .057 mm) Nos. 2, 3 and 4 .002" to .00375" (.051 to .095 mm) |
| Crank pin journal diameter | 2.06175" to 2.06275" (52.36 to 52.39 mm) |
| Recommended connecting rod bearing clearance | .0015" to .002" (.038 to .051 mm) |
| Recommended connecting rod side clearance | .005" to .008" (.127 to .203 mm) |
| *Recommended piston clearance | *.0015" (.038 mm) |
| Recommended piston pin clearance | Light push fit at 70° F. (21.1° C.) |
| Piston ring width - compression | 1/8" (3.175 mm) |
| Piston ring width - oil control | 3/16" (4.762 mm) |
| Recommended piston ring gap | .013" to .018" (.330 to .457 mm) |
| Valve tappet clearance - exhaust - hot | .006" (.152 mm) |
| Valve tappet clearance - exhaust - cold | .007" (.178 mm) |
| Valve tappet clearance - intake - hot | .004" (.102 mm) |
| Valve tappet clearance - intake - cold | .004" (.102 mm) |
| Valve timing (check with .010" (.254 mm) tappet clearance) | Intake opens 15 deg. B.U.D.C. Intake closes 43 deg. A.L.D.C. Exhaust opens 48 deg. B.L.D.C. Exhaust closes 10 deg. A.U.D.C. |

*These are cam ground (oval or eccentric) pistons and the clearance is to be determined with a .002" x 1" (.005 x 25.4 mm) hardened feeler gauge inserted between the piston and cylinder wall on the pressure side (right side when facing with the car). With a spring scale attached to the feeler gauge a pull of 7 to 12 pounds (3.175 to 5.443 kgs.) should be required to remove the gauge.

Ignition

| | |
|--------------------|----------------------------------|
| Ignition timing | U.D.C. 1-6 |
| Firing order | 1-5-3-6-2-4 |
| Breaker point gap | .018" to .024" (.457 to .610 mm) |
| Type of Spark Plug | Champion Metric No. 8 |
| Spark plug gap | .025" (.635 mm) |

Steering

| | |
|----------------------|-----------------------------------|
| Front axle caster | 1 deg. to 1 1/2 deg. |
| Front wheel camber | 1 deg. to 1 1/2 deg. |
| King pin inclination | 9 1/2 deg. |
| Front wheel toe-in | 1/16" to 1/8" (1.587 to 3.175 mm) |
| Tire size | 17 x 5:50 |
| Tire pressure | 35 pounds (2.461 kgs) |

Table of Unit Capacities

| | U.S. | Imperial | Liters |
|----------------|-------------|------------|--------|
| Engine | 5 quarts | 4.14 qts. | 4.73 |
| Cooling System | 16 quarts | 13.3 qts. | 15.14 |
| Transmission | 2 1/2 pints | 2.10 pts. | 1.20 |
| Rear Axle | 2 1/2 pints | 2.10 pts. | 1.20 |
| Gasoline Tank | 14 gallons | 11.65 gal. | 53 |

Lamp Bulbs

all lamp bulbs are of the single contact, one filament, bayonet type with the exception of those used in the headlamps and tail lamp which are of the double contact, two filament, type.

| Location | Voltage | Candle Power |
|------------|--------------------|--------------|
| Head | 6-8 Mazda No. 1000 | 32-32 |
| Parking | 6-8 Mazda No. 63 | 3 |
| Tail) | | (2 |
| Stop) | 6-8 Mazda No. 1158 | (21 |
| Instrument | 6-8 Mazda No. 63 | 3 |
| Dome | 6-8 Mazda No. C 81 | 6 |

LUBRICANT SPECIFICATIONS

Engine

High speed or hard pulling with air temperatures above +90° F. (+32.2° C)
S.A.E. viscosity No. 40

Air temperatures above +45° F. (+7.2° C)
S.A.E. viscosity No. 30

Air temperatures above +10° F. (-12.2° C)
S.A.E. viscosity No. 20

Air temperatures below +10° F. (-12.2° C)
S.A.E. viscosity No. 10

Transmission

For air temperatures above +35° F. (+1.7° C) use
S.A.E. No. 110 Free Wheeling Lubricant.

For air temperatures above +15° F. (-9.4° C) use
S.A.E. No. 90 Free Wheeling Lubricant.

For air temperatures above -15° F. (-26.1° C) use
S.A.E. No. 80 Free Wheeling Lubricant.

Rear Axle

For air temperatures above +32° F. (0° C) use
S.A.E. No. 110 Gear Lubricant.

For air temperatures below +32° F. (0° C) use
S.A.E. No. 90 Gear Lubricant.

EMERGENCY REPAIR KIT

For your convenience, we have developed a handy emergency repair kit which you will find extremely desirable to carry in your car at all times. This kit consists of such items as fan belt, lamp bulbs, spark plug, absorbent paper hand towels, etcetera, and will assure you freedom from anxiety while touring. This material is offered in a handy package which will fit conveniently in many places in your car such as under the seats, in door pockets, or elsewhere. The price is especially attractive. Inquire of your dealer.

INDEX

| | Page | | Page | | Page |
|--------------------------|--------|--------------------------|-------|-------------------------|------|
| Ammeter | 4 | Engine Specifications | 15 | Oil Dilution and Sludge | |
| Anti-Freeze Chart | 12 | Engine, Starting the | 3-4 | Formation, How to Avoid | 10 |
| Anti-Freeze Solution | 11 | Foreword | 2 | Oil Pressure Gauge | 4 |
| Brake Adjustment | 13 | Gasoline Gauge | 4 | Operation | 3 |
| Brake Controls | 6 | Gasoline Tank Capacity | 15 | Rear Axle Lubricant | |
| Carburetor Air Cleaner | 10-11 | Heat Indicator, Engine | 4 | Capacity | 15 |
| Carburetor Choke | 3 | Horn Button | 4 | Reversing the Car | 7 |
| Car Finish, Care of | 12-13 | Index | 16 | Seat Regulator | 6 |
| Chassis Lubrication | 8-9 | Ignition Coil Lock | 3 | Shifting Gears | 6 |
| Clutch Pedal | 6 | Ignition Data | 15 | Speedometer | 5 |
| Cold Weather Suggestions | 12 | Lamp Bulb Data | 16 | Starter Control | 3 |
| Cooling System | 11 | Lamps, Head | 5 | Starting on a Hill | 7 |
| Cooling System, Capacity | | License Data | 3 | Steering Data | 15 |
| of | 15 | Lighting Circuit Fuse | 5 | Stopping on a Hill | 7 |
| Cooling System Cleaner | 11 | Lighting Switches | 5 | Stopping the Car | 7 |
| Cooling System, Draining | the 12 | Instrument Lamp Switch | 5 | Tire Pressures | 13 |
| | | Dimming Switch | 5 | Transmission and Gear | |
| Crank Case Cleansing | 10 | Lubricants, Selection of | 10 | Shift Controls | 6 |
| Descending a Hill | 7 | Lubricants, | | Transmission Lubricant | |
| Engine Oil | 10 | Specifications for | 16 | Capacity | 15 |
| Engine Oil Capacity | 15 | Maintenance, General | 13-14 | Throttle Control Button | |
| Engine Oil Level | | Measures, Emergency | | and Foot Accelerator | 3 |
| Checking the | 10 | Corrective | 14 | Windshield Wiper | 5 |