

OWNER'S MANUAL



FOR

1948 CHEVROLET

PASSENGER CARS

OWNER'S MANUAL

1948

PASSENGER CARS

◆
Second Edition
◆



CHEVROLET MOTOR DIVISION

GENERAL MOTORS CORPORATION

DETROIT 2, MICHIGAN

THE OPEN DOOR TO FRIENDSHIP

Dear Chevrolet Owner:

YOU have purchased a new Chevrolet car, and that purchase means a great deal to you, to your Chevrolet dealer, and to Chevrolet.

To you, it means possession of a fine motor car. To your Chevrolet dealer, it means an opportunity—and an obligation—to help you realize true satisfaction with your investment. And to Chevrolet, it means a large and willing interest in maintaining your continued satisfaction, for the entire Chevrolet organization desires not merely to make sales, but also to make friends.

Our interest in you, as a Chevrolet owner, and in your car, as a Chevrolet product, will continue during all the months and years that you drive your Chevrolet. We want to make Chevrolet ownership the most pleasant motor car experience you have ever enjoyed.

We ask you to read these pages carefully. The purpose of this book is to acquaint you with your new Chevrolet. It is not a mechanical book and does not contain a lot of technical phrases. Instead it tells you where the various gauges, dials and switches are located and a general outline of lubrication and maintenance.

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WARRANTY

MANUFACTURER'S WARRANTY

It is expressly agreed that there are no warranties, expressed or implied, made by either the Dealer or the Manufacturer on Chevrolet motor vehicles, chassis or parts furnished hereunder, except the Manufacturer's warranty against defective materials or workmanship as follows:

"The Manufacturer warrants each new motor vehicle, including all equipment or accessories (except tires) supplied by the Manufacturer, chassis or part manufactured by it to be free from defects in material and workmanship under normal use and service, its obligation under this warranty being limited to making good at its factory any part or parts thereof which shall, within ninety (90) days after delivery of such vehicle to the original purchaser or before such vehicle has been driven 4,000 miles, whichever event shall first occur, be returned to it with transportation charges prepaid and which its examination shall disclose to its satisfaction to have been thus defective; this warranty being expressly in lieu of all other warranties, expressed or implied, and all other obligations or liabilities on its part, and it neither assumes nor authorizes any other person to assume for it any other liability in connection with the sale of its vehicles.

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

* * *

The Manufacturer has reserved the right to make changes in design or add any improvements on motor vehicles and chassis at any time without incurring any obligation to install same on motor vehicles and chassis previously purchased.

TIRE WARRANTY

The tires that came with your car are guaranteed by the tire manufacturer, or his agent, according to the standard Tire Manufacturer's Warranty.

POLICY

OWNER SERVICE POLICY

The Chevrolet dealer agrees to promptly perform and fulfill all of the terms and conditions of the "Owner Service Policy" which was given to you at the time you took delivery of your new Chevrolet car.

REPAIR PARTS

Genuine Chevrolet parts manufactured to the same rigid specifications as the parts used in the original assembly of the car, are carried in stock by Authorized Chevrolet Service Stations.

Use only Genuine Chevrolet parts for replacement purposes, because they are better. They are sold at uniform prices throughout the United States. Printed price lists published by the Chevrolet Motor Division are open to the inspection of owners at any Authorized Chevrolet Dealer's establishment.

SERVICE CHARGES

Charges prevailing at Authorized Chevrolet Service Stations are based on Flat Rate schedules furnished by the Chevrolet Motor Division. These Flat Rates are based on the use of methods and tools approved by the Chevrolet Motor Division, assuring the highest quality of work at the lowest possible price consistent with this quality.

Protect your investment by having your replacement, repair and maintenance work done by an Authorized Chevrolet Service Station, which has all the necessary tools and the factory-trained men.

GENUINE CHEVROLET ACCESSORIES

The materials used in the manufacture of these accessories are of the highest and finest quality.

These accessories will appeal to every discriminating Chevrolet buyer. They offer him the opportunity to show his individuality in the selection of added touches of refinement and luxury for his car.

They are carried in stock by all Chevrolet Dealers.

BREAKING-IN PERIOD

Your Chevrolet car has been designed to furnish you many thousands of miles of motoring pleasure.

In order to maintain its high standard of performance and efficiency, special care should be given for the first two thousand miles as to the speed at which the car is driven and also to lubrication.

To properly break in the moving parts of the car, do not drive faster than:

40 Miles per hour for the first 100 Miles

50 Miles per hour for the next 200 Miles

60 Miles per hour for the next 200 Miles

Continuous high speed driving should not be attempted until the car has been driven 2000 miles.

See that your car is lubricated at regular intervals in accordance with the recommendations under "General Lubrication."

Permit the engine to warm up before accelerating. This holds true for summer or winter. All engine oils thicken when cooled and thin when warmed. This precaution will prevent damage to fast moving parts.

Check the oil level every 200 miles. Use grade 10 W for the first 500 miles. After this period add oil which conforms with factory recommendations (see lubrication section) as necessary to keep oil level between the add oil and full mark on the oil level rod. These notations have broad arrows pointing to the level lines.

MAINTENANCE SCHEDULE

The table below indicates some of the things which should be done at regular mileage intervals.

Mileage	Lubri- cate Chassis	Change Oil	Clean Air Cleaner	Clean Spark Plugs	Cross Change Tires	Check Shock Ab- sorbers	Tune Engine	Complete Inspection by Dealer	Pack Front Wheel Bearings
500		★							
1000	★								
2000	★	★	★						
3000	★			★	★				
4000	★	★	★						
5000	★					★	★	★	
6000	★	★	★	★	★				
7000	★								
8000	★	★	★						
9000	★			★	★				
10000	★	★	★			★	★	★	★
11000	★								
12000	★	★	★	★	★				
13000	★								
14000	★	★	★						
15000	★			★	★	★	★	★	

The following operations should be done as indicated:

Period	Check Battery	Check Air In Tires	Change Rear Axle Lub.	Change Trans. Lub.	Add Anti- Freeze	Flush Cool- ing System
Weekly	★	★				
Spring			★	★		★
Fall			★	★	★	★

WAYS TO SAVE GAS AND OIL

How many miles do you get to the gallon? Unless you are the exception, you can get still greater mileage. And without cost! Just eliminate a few of the faults which most of us have and which tend to waste gasoline and oil. Some of the most common ones are listed here. Study them! Correct them and you'll save on fuel bills.

Quick Get-Aways are thrills that cost money. Tramping suddenly on the accelerator, or pumping it, feeds your motor more gasoline than it can use. Get away easily and smoothly to save gasoline. Slip into high gear at 20 to 25 miles per hour.

An Idling Motor is a useless expense. Turn it off while you are waiting at the curb for a friend, or at a train crossing.

An Inefficient Carburetor is an efficient gasoline waster. Have yours checked at least twice a year (for summer and winter driving) to be sure it is properly adjusted, that the octane selector is properly set, and that the sediment bulb is clean.

Cheap Lubricants are a waste of money. Use oil of good quality and of the grade specified by the manufacturer. Have your car well greased every thousand miles.

High Speeds are more than dangerous. At 70 miles per hour your motor uses almost twice as much gasoline, to go one mile, as it does at 20 miles per hour. Economical cruising speeds are 30 to 45 M.P.H.

Soft Tires are hard on your gasoline bill. They mean more road friction. This gives your motor unnecessary work to do and makes it use extra gas. Keep the extra money in your pocket by keeping your tires inflated to the recommended pressures.

To Obtain Maximum Efficiency and greatest gas mileage, have a complete motor tune-up performed every 5,000 miles or at least twice a year.

CONTROLS AND INSTRUMENTS

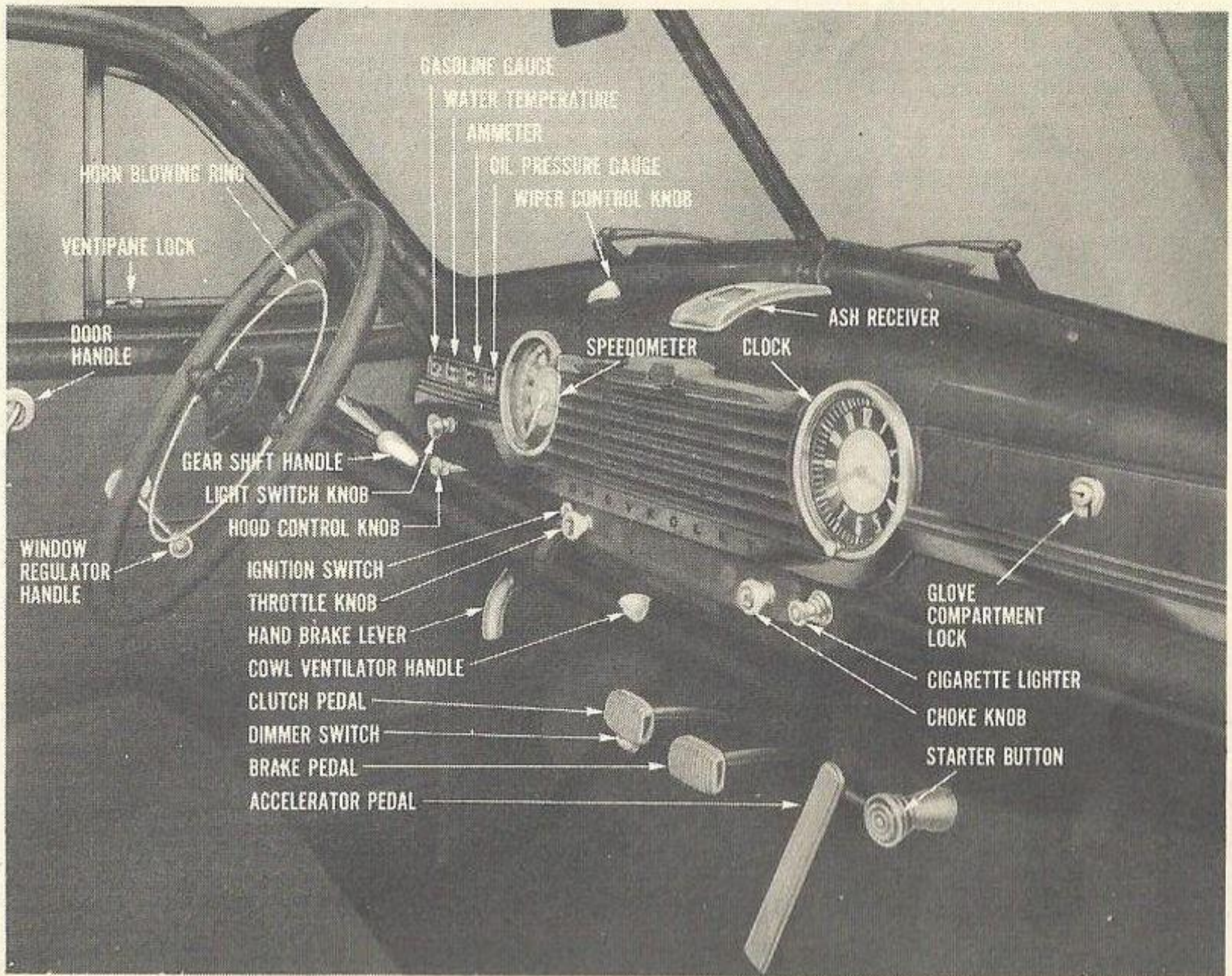


Fig. 1—Interior view of Driver Compartment showing all Controls and Instruments

The driver of a car should familiarize himself with the various controls provided for its proper handling. This does not apply to the beginner alone, as although there are many points of similarity among all cars, there are also important differences. It is not wise, regardless of previous experience, to drive a new or different make of car before fully understanding what each control is for and how to use it.

INSTRUMENT PANEL

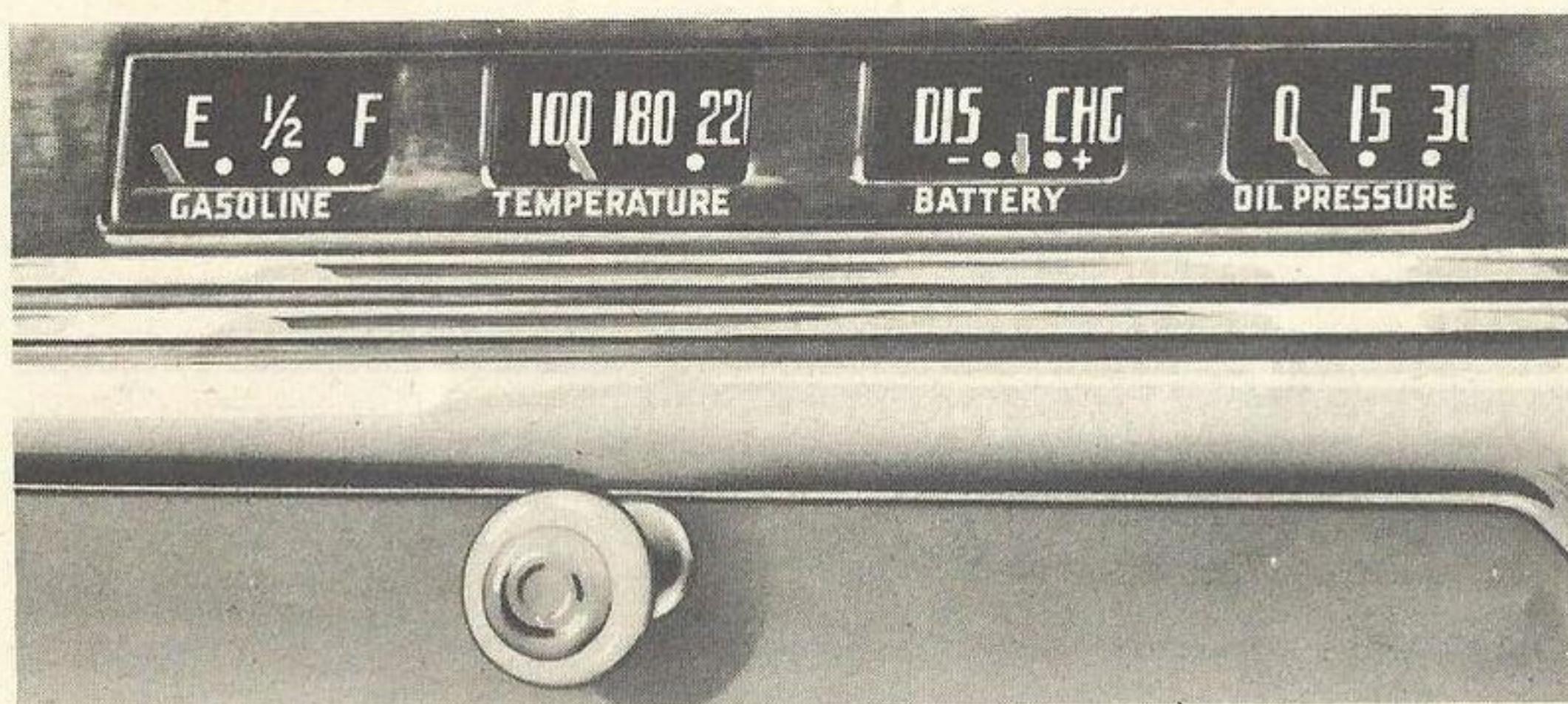


Fig. 2—View Showing Instruments Only

Gasoline Gauge — This electrically operated instrument indicates the amount of gasoline in the tank only when the ignition switch is turned on. When the ignition is turned off, the pointer returns to the empty mark.

Water Temperature Indicator— The temperature of the water or anti-freeze solution circulating through the engine cooling system is indicated by this gauge. The needle should register within the normal range except during long continuous driving in warm weather.

Ammeter—This gauge indicates the amount of electrical current that is being supplied to or withdrawn from the storage battery.

Oil Pressure Gauge—The oil pressure gauge should always indicate pressure while the engine is running. If no pressure is indicated stop the engine at once and investigate the cause.

Lighting Control — The lighting switch incorporates a 30 ampere thermal circuit breaker which will cause intermittent flashing of the lights if a short occurs. A rheostat operated by turning switch knob to right or left controls the brightness of the instrument panel lights.

INSTRUMENT PANEL

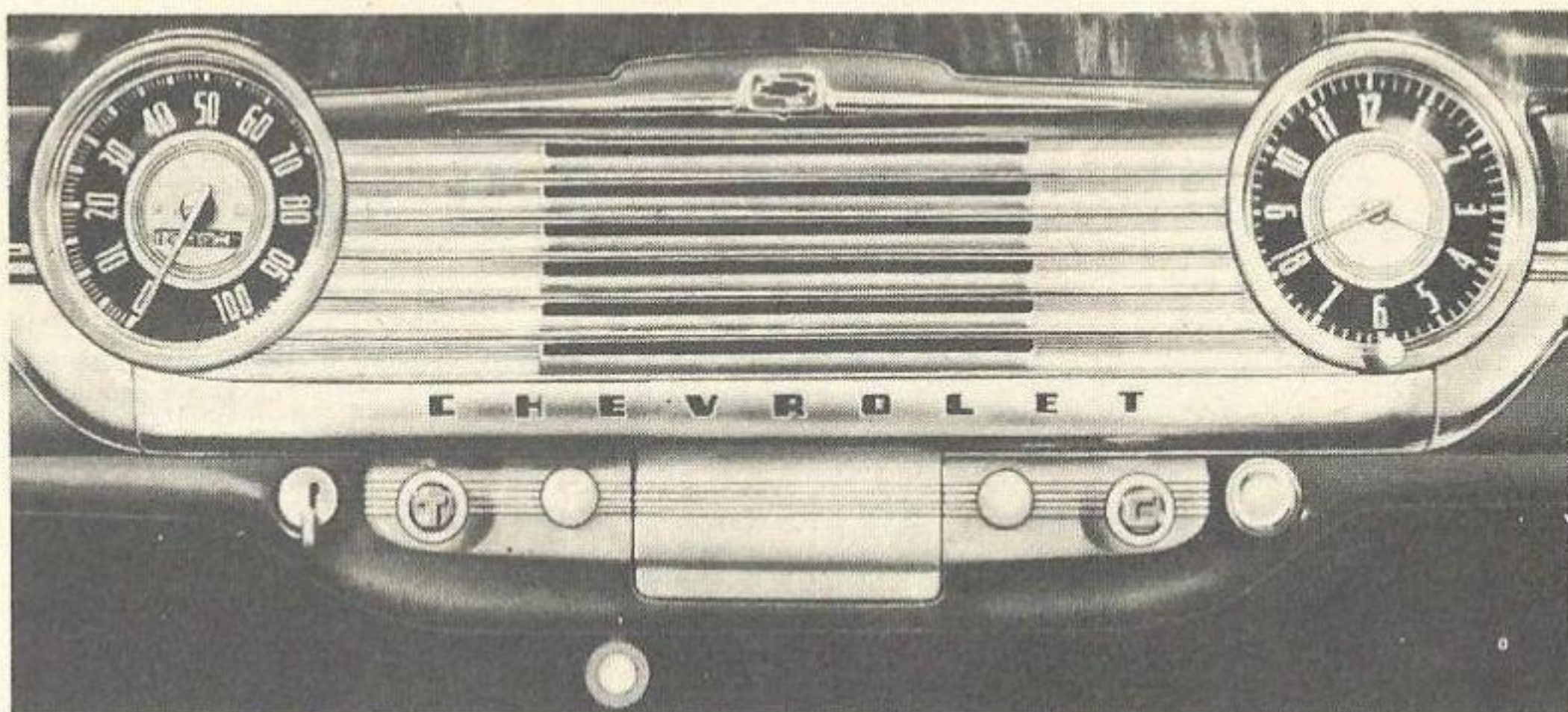


Fig. 3—View Showing Speedometer, Clock, Ignition Switch, Throttle and Choke Button, Cigarette Lighter and Cowl Ventilator.

Speedometer—The speedometer is of the circular type and registers both speed and cumulative mileage.

Clock—(if equipped). Set clock by pulling out and turning stem wind knob at bottom of dial.

Ignition Lock—Turn key to vertical position to turn on ignition. Turn key clockwise from vertical to “unlocked off” position. Turn key counterclockwise from vertical and remove key for “locked off” position. Key may be removed in any of these positions.

Throttle Control—Throttle control knob is used to open or close throttle by hand. Pull knob out to open throttle.

Cowl Ventilator—Push handle down to open and pull back to close.

Choke Control—To provide a richer full mixture for cold weather starting a choke control knob is provided. Pull knob out part or all way depending on climatic conditions.

Cigarette Lighter—(if equipped). Push in to light. Lighter pops out automatically when filament is hot.

DRIVING CONTROLS

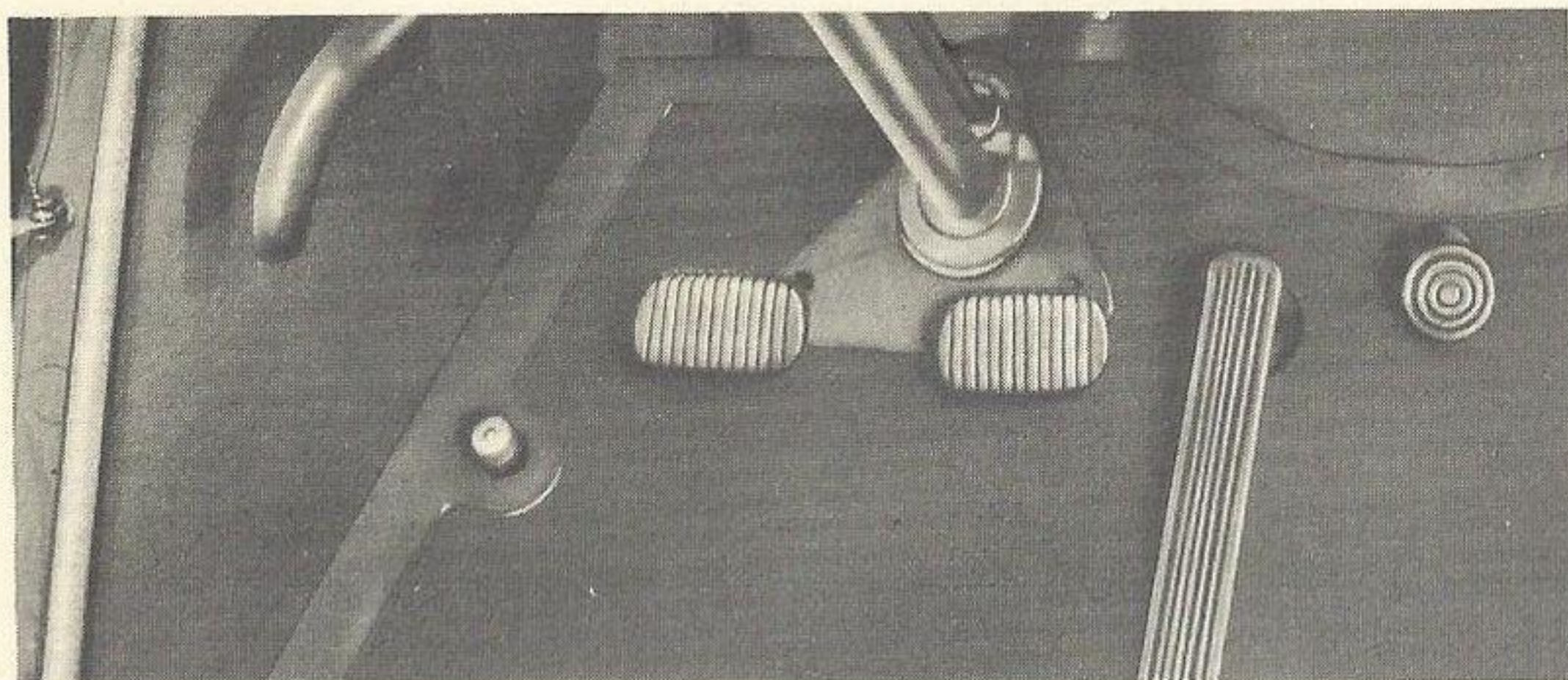


Fig. 4—View Showing Clutch and Brake Pedal, Accelerator and Starter Pedal, and Headlamp Toe Switch.

Clutch Pedal—The clutch pedal is used to apply power from the engine gradually and smoothly when starting the vehicle. When the pedal is depressed the engine is disengaged from the transmission. Avoid driving with foot resting on the clutch pedal as this causes premature wear of the clutch.

Brake Controls — The foot brake pedal is used to apply braking pressure to all four wheels in proportion to the amount of foot pressure applied to the pedal. The hand brake lever operates independently of the hydraulic brake system and applies brake pressure to the rear wheels only.

Accelerator Pedal—The pedal located to the left of the starter pedal is used to open or close the carburetor throttle valve. The driver, by applying variable pressure to this pedal with his foot, obtains the desired car speed.

Starting Pedal—Pressing down on the starting pedal first engages the starter pinion with the teeth of the flywheel and, at the end of the stroke closes the switch of the electric starting motor, which cranks the engine.

Headlamp Toe Switch—This switch, at the extreme left, is an alternating switch which, with the headlamp control knob in the second position (all the way out) alternates the headlamps from the country (upper) to the traffic (lower) beam.

MISCELLANEOUS CONTROLS

Hood Control—The hood lock is released by a knob under the left side of instrument panel. Pulling on the knob releases the lock allowing hood to raise sufficiently to enable release of the safety catch located under forepart of hood nose.

Windshield Wiper Control—Control lever is located on dash above instrument cluster. Moving lever to the right starts the wipers. Wiper speed may be controlled by careful positioning of the lever.

Front Seat Adjuster—Fingertip control lever is located at the left side end of the front seat. By raising the lever the seat may be moved backwards or forwards.

Front Ventipane Control—The front ventilators are operated by a crank handle and all models except Cabriolet are locked by a sliding bolt on the lower frame. To lock simply slide knob toward rear of door. To open the lock, the knob must be pulled out before the bolt can be disengaged.

Quarter Window Regulator—Fleetmaster sport sedans and 5-Passenger coupes and Station Wagons are equipped with sliding rear quarter windows. The regulating mechanism is controlled by the handle rising through the window lower moulding. When the handle is in the forward position the window is closed. By pulling back on the handle the window may be opened. The window is automatically locked when closed or in any of several open positions.

Sun Visor—The sun visors are designed so they may be moved in and out as well as revolved to the side to better shut off the glare from the sun. Fleetline and Fleetmaster models are equipped with right and left hand sun visors whereas the Stylemaster models are equipped with one sun visor on the driver's side.

Horn Button—Fleetline and Fleetmaster models are equipped with a horn blowing ring permitting finger tip operation of the horn. Horn button for Stylemaster models is located in the center of the steering wheel.

Ash Receiver—All ash receivers have a cigarette snuffer. To empty the ash container, press down on the cigarette snuffer and lift out the container.

KEYS AND LOCKS

Statistics prove that 92% of all cars stolen is due to owner neglect in leaving the ignition and doors unlocked.

The majority of these thefts are by juveniles. Make a practise of locking your car in an effort to reduce juvenile delinquency.

Two keys are furnished with the car which operate the front doors, the ignition switch, the glove compartment and trunk lock.

As a protection against unauthorized persons securing keys, the key numbers do not appear either on the keys or the face of the locks, but on a small metal insert fastened in the keys. Mark these key numbers on your Certificate of Title or Bill of Sale as soon as you take delivery of the car, and have your dealer knock these number inserts out of the keys.

To lock the doors from inside, push down the locking knob located on the bottom of the window opening of each door.

To lock the car from outside, either of two ways may be used.

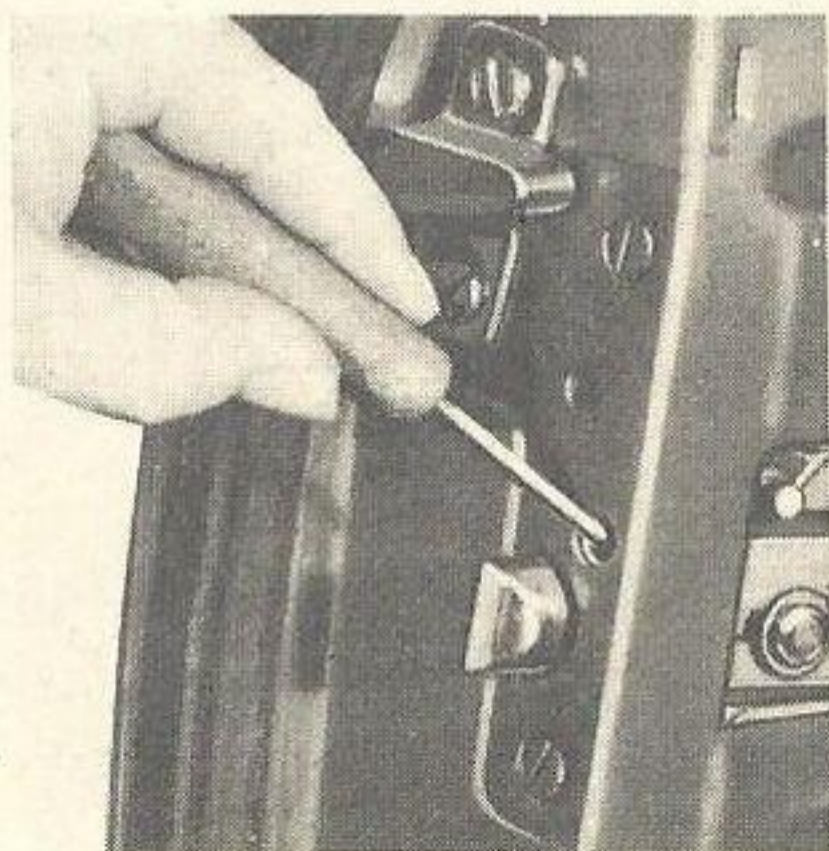
1. With the door open push down the inside locking knob and hold the outside handle down (vertical) while closing the door.
2. With the door closed, insert key in the lock of the front door and give the key a quarter of a turn.

Sedan Rear Door Lock

A safety feature is incorporated in the rear door locks of all four-door sedans for the convenience of owners who have small children. The door lock incorporates a means of shifting the remote control link lever to provide free-wheeling on the inside or remote control door handles at the option of the owner. With the remote control link lever set in the free-wheeling position the rear doors cannot be opened from inside.

All four-door sedans have the lever set for positive action on these handles. To change to free-wheeling use a pointed tool (similar to that shown in fig. 5) through the clearance hole in the face of the door lock pillar, engage the tab in the remote control lever link and trip the lever to the "UP" position to engage the intermittent lever.

NOTE: The tool can be made up from an ice pick.



***Fig. 5—View showing
Setting Free-Wheeling in
Rear Sedan Door***

TIRES

Maintaining correct tire pressure is even more important with synthetic tires than with natural rubber tires. Heat, caused by under-inflation, overload and excessive speed, is the greatest enemy of synthetic tires. Check tire pressures at least twice a week, preferably when tires are normally cold. AVOID UNDER-INFLATION to prevent pinched tubes, rim bruises, excessive heat, and irregular or rapid tire wear. AVOID OVER-INFLATION to prevent tire ruptures, hard riding, irregular or rapid tire wear, and reduction of skid resistance.

Maintain 26 pounds pressure in the front tires and 28 pounds in the rear tires.

Tube Repair

The cold patch method of repairing tubes has proven to be unsatisfactory for synthetic tubes. When tube repairs are necessary they should be vulcanized.

Mounting Synthetic Tires and Tubes

1. Clean inside of casing thoroughly.
2. Insert tube in tire and inflate until it is nearly rounded out.
3. Inspect wheel for rim rust scale, roughness or bent flanges. Clean and straighten wheel if necessary.
4. Using a brush or cloth swab apply a film of neutral vegetable oil soap to the inside and outside of tire beads and also to the rim side of tube. Do not allow soap solution to run down into tire.
5. Place the tire and tube on the wheel according to standard procedure. Center the tire on wheel so that the beads are out of the rim well before inflating.
6. Center tire valve and pull it firmly against the wheel. Hold valve in position and inflate tire to recommended pressure while watching to see that beads of tire are forced out evenly against wheel flanges.
7. Completely deflate tire by removing valve core. Install core and reinflate to recommended pressure.

NOTE: The lubrication of tire beads and tubes, and the inflation, deflation and reinflation of assembly is most important. If this is not done the tube will be stretched excessively at the bead sides and drop center of the wheel which will cause premature failure.

STARTING THE ENGINE

Do not pump the accelerator pedal before or during the use of the starter as this will cause difficult starting.

WARNING—CARBON MONOXIDE

Never start or run an engine in a closed garage. The exhaust gases from all motor vehicles are highly dangerous. They contain carbon monoxide gas—which is colorless, tasteless and odorless, but nevertheless is a deadly poison.

TO START THE ENGINE

1. Before starting engine make sure transmission shift lever is in neutral position.
2. Depress the clutch pedal.
3. Turn "ON" the ignition switch.
4. Press down on the starting motor pedal until the engine starts. Then release the pedal.
5. Under cold starting conditions pull the choke button out part or all the way depending on climatic conditions. If the engine is warm or during summer weather it is not generally necessary to use the choke at all.
6. In case the engine becomes overchoked or flooded at anytime, be sure the choke button is all the way in then press the foot accelerator down fully and operate starter continuously until engine starts. This will eliminate further choking. If it becomes desirable to again choke the carburetor for starting follow the procedure under cold starting.

GEAR SHIFTING

Vacuum Power Shift

The vacuum power shift utilizes both manual and vacuum power to accomplish the change in gears.

Movement of the gearshift lever, mounted on the steering column, requires only a very small percentage of the force necessary to shift gears with the conventional gearshift lever.

The gearshift lever may be placed in any one of five positions—neutral, reverse, first, second or third. The travel of the lever is the same as that of the conventional floorboard lever, except that it moves in a vertical plane instead of a horizontal plane (fig. 6). The operation of the lever in engaging the gears consecutively is as follows:

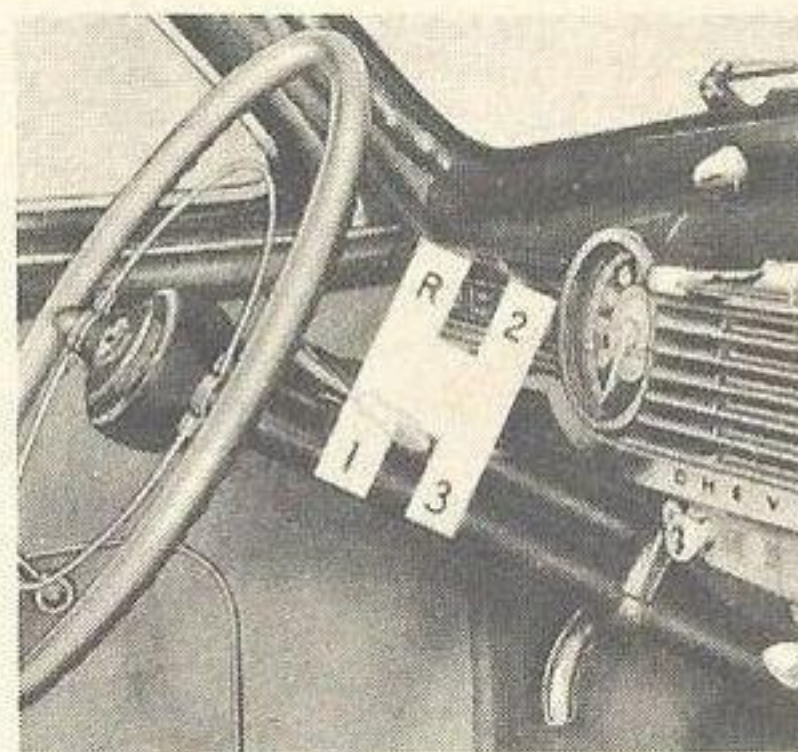


Fig. 6—View Showing Shift Pattern

1. See that gearshift lever is in neutral position (lever may be raised up and down).
2. With clutch pedal depressed start engine.
3. First speed—Depress clutch pedal and raise lever toward steering wheel and pull toward the rear of car until it is fully engaged in first gear location; then gradually release clutch pedal.
4. Second speed—Depress clutch pedal, push lever towards front of car. Lever will cross through neutral moving away from steering wheel and engage second gear position. Release clutch pedal.
5. Third speed—Depress clutch pedal, pull lever toward the rear of the car until lever has reached the end of its travel into third gear position. Release clutch pedal.
6. Reverse—With car at a standstill, depress clutch pedal, raise lever, and push forward.

NOTE: Before shutting engine off be sure to place gear shift lever in neutral position.

MAINTENANCE

Air Cleaner and Silencer

The air taken into the carburetor to mix with fuel is thoroughly cleaned in passing through the combined air cleaner and flame arrester mounted on the top of the carburetor at the air intake. The air cleaner should be removed every 2,000 miles or oftener depending on driving conditions and the dirt that has collected on the gauge element cleaned out.

For service and special equipment a heavy duty oil bath air cleaner is available which is suitable for operating under extremely dusty conditions. This cleaner does not affect the power and economy in any way. Oil of not less than SAE 50 Viscosity **MUST** be used in summer and lighter grades in winter and the level must be maintained. One pint of this oil will fill the cleaner to its proper level.

The periods at which this cleaner should be serviced will vary greatly according to the particular conditions under which the car is operating. Experience will tell what this period may be.

Battery

The storage battery is located on the right side of the engine compartment just ahead of the dash.

The battery solution level should be maintained at $\frac{1}{4}$ " above the plates by adding distilled water. It is a good plan to add water at least once a week in summer and every two weeks in winter. Keep all battery terminals clean and tight.

A discharged battery will freeze at a little below the freezing point of water (32 degrees F.). A fully charged battery will not freeze even at temperatures as low as 30° below zero; therefore, keep the battery fully charged.

Fuel Pump

The fuel pump, located on right side of engine, should be checked periodically and the glass bowl removed and cleaned whenever dirt or water is visible. When bowl is removed, also clean filter screen and install new bowl gasket when reassembling.

MAINTENANCE

COOLING SYSTEM

The function of the cooling system is to keep the engine at its most efficient operating temperature under all driving conditions.

The design of the Chevrolet cooling system provides large water passages around the cylinder walls, spark plugs and exhaust valves. A thermostat is used which maintains an efficient operating temperature at all times and the large capacity water pump is sufficient to take care of the cooling needs of the engine.

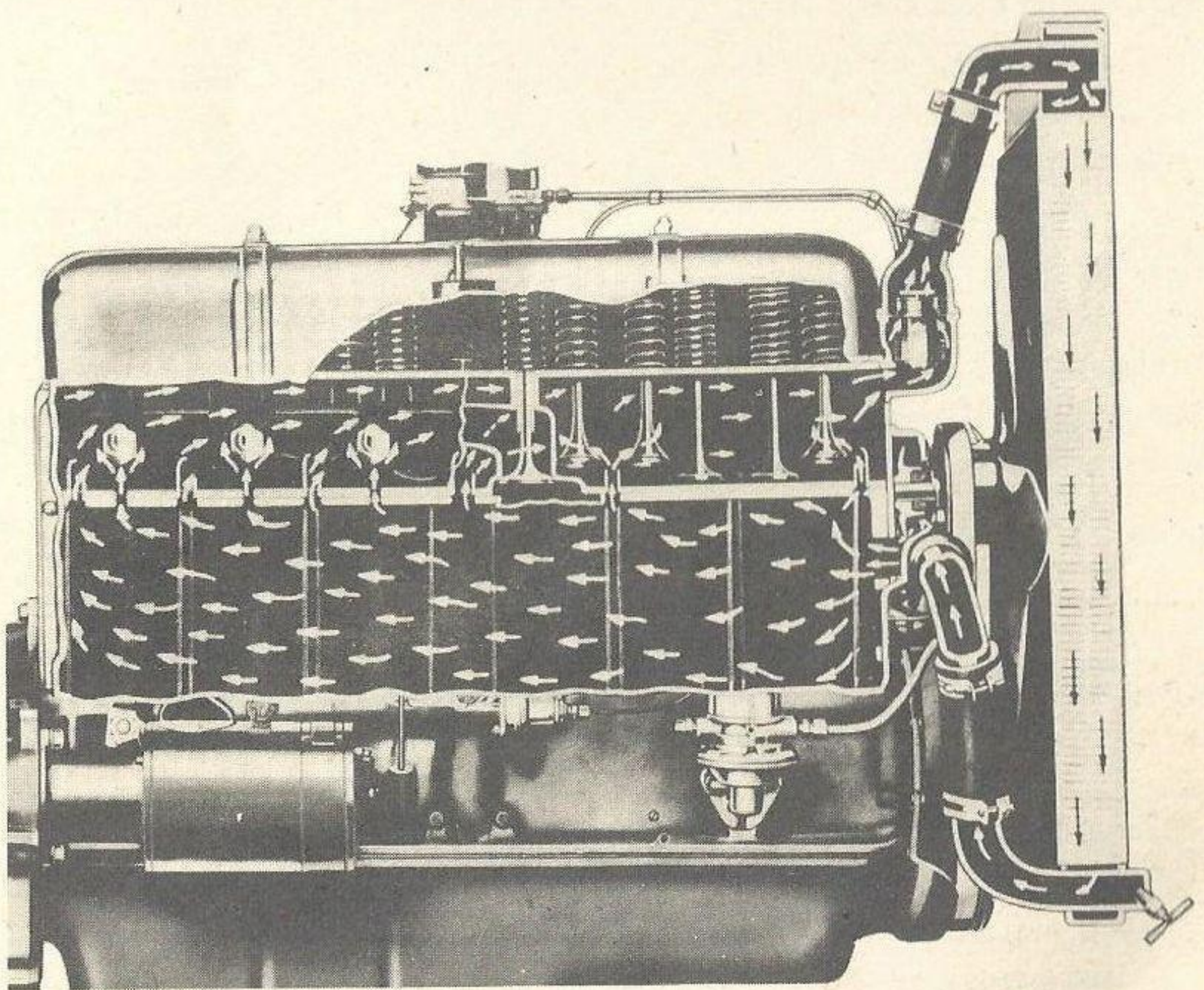


Fig. 7—View Showing Water Flow Through Engine

A pressure type radiator cap is used to prevent coolant loss. This cap when removed from a hot engine should be rotated to the left to the first stop, which is its vented position, to relieve pressure in the system. When pressure in system is relieved turn cap again to the left to remove. Turn the cap all the way to the right when reinstalling.

MAINTENANCE

The entire circulating system should be thoroughly flushed out at regular intervals. This can be accomplished with any of the several types of radiator flushers available. It will be found that the systems employing the reverse method of flushing will prove most efficient.

When draining the cooling system, open the drain cock at the bottom of the radiator and also the drain cock at the lower left side of the cylinder block and remove pressure cap.

ANTI-FREEZING SOLUTIONS

In selecting an anti-freezing solution for winter operation, the local conditions and the type of service should be considered. The following information is given to assist the car owner in selecting the anti-freezing solution best suited to meet his own individual driving conditions.

Alcohol—Denatured alcohol and methanol are used extensively for anti-freezing solutions. The various types of alcohol anti-freeze afford protection against freezing and have the advantage of wide distribution and low first cost.

GM Methanol Protection Table

Cooling System Capacity in Quarts	Quarts of GM Methanol Required for Anti-Freeze Protection at Temperatures shown below								
	1	2	3	4	5	6	7	8	9
15		21°	13°	5°	-5°	-17°	-30°	-45°	
*16		21°	15°	7°	-2°	-12°	-24°	-38°	-52°

*Cooling system capacity is 16 quarts if hot water heater is used.

Other alcohol and methanol anti-freezes should be used in accordance with instructions issued by the anti-freeze manufacturer.

Ethylene Glycol—Ethylene glycol is, in first cost, more expensive than alcohol. Ethylene glycol anti-freezing solutions have the distinct advantage of possessing a somewhat higher boiling point than alcohol anti-freezing solutions and, consequently, may be operated at a higher temperature, resulting in a more effective performance of the car heater.

MAINTENANCE

GM Ethylene Glycol Protection Table

Cooling System Capacity in Quarts	Quarts of GM Ethylene Glycol Required for Anti-Freeze Protection at Temperatures shown below								
	1	2	3	4	5	6	7	8	9
15			16°	8°	0°	-12°	-26°	-43°	
*16			17°	10°	2°	- 8°	-19°	-34°	-52°

*Cooling system capacity is 16 quarts if hot water heater is used.

Other ethylene glycol anti-freezes should be used in accordance with instructions issued by the anti-freeze manufacturer.

Servicing the Cooling System—

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

Cylinder head gaskets should be tightened, or replaced if necessary, to avoid the possibility of anti-freezing solutions leaking into the engine or exhaust gas blowing into the cooling system.

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

Testing—Some testing devices are made to test only one kind of anti-freezing solution. Others have several scales and may be used for the corresponding kinds of anti-freeze.

The freezing point of a solution containing both alcohol and ethylene glycol cannot be determined accurately by means of a hydrometer.

GENERAL LUBRICATION

Your Chevrolet dealer is equipped to render complete Chevrolet Specialized Lubrication Service. We recommend that you take advantage of his modern equipment and trained men.

Lubricants are less expensive than repair bills, and should be applied regularly if you are to obtain a maximum of useful service from your car. It is, consequently, important that the proper grade of lubricants be used in accord with a definite schedule.

In your selection of the proper brand of oil, it is desirable to consider the reputation of the refiner or marketer. He is responsible for the quality of his product and his reputation is the car owner's best indication of quality.

ENGINE LUBRICATION

Use of the proper engine oil is of great importance in obtaining maximum performance and satisfaction from your car.

It is imperative that the recommended light oils be used in the engine during the "breaking-in" period.

Light oils assure a better "breaking-in" of the engine, as they assure ease of starting the engine, prompt flow of a sufficient quantity of oil to the bearings, less friction between moving parts, less wear of moving parts, etc.

Types of Oils—Crankcase oils in service, unless protected against oxidation, may form sludge and varnish and under some conditions corrosive acids.

To minimize the formation of these harmful decomposition products and to supply the type of oil best suited for the different operating conditions, the oil industry markets several types of crankcase oils.

REGULAR, PREMIUM AND HEAVY-DUTY TYPE OILS—The REGULAR TYPE or straight mineral motor oils may be used under moderate or light driving conditions.

Under normal driving conditions where the engine is required to develop greater power for a greater percentage

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of the time, the PREMIUM TYPE MOTOR OILS are recommended.

The HEAVY-DUTY TYPE MOTOR OILS which are recommended for use in heavy-duty truck and bus diesel and gasoline engines, are equally satisfactory for use in passenger-car engines under the same operating conditions for which PREMIUM TYPE MOTOR OILS are recommended.

FOR MAXIMUM PROTECTION OF YOUR CHEVROLET ENGINE UNDER ALL DRIVING CONDITIONS, IT IS RECOMMENDED THAT PREMIUM OR HEAVY-DUTY TYPE MOTOR OILS be used.

When to Change Crankcase Oil—

Oils have been greatly improved, driving conditions have changed, and improvements in engines, such as the crankcase ventilating system, have greatly lengthened the life of good lubricating oils. However, to insure continuation of best performance, low maintenance cost and long engine life, it is necessary to change the crankcase oil whenever it becomes contaminated with harmful foreign materials. Under normal driving conditions draining the crankcase and replacing with fresh oil every 2000 to 3000 miles is recommended.

Under the driving conditions described in the following paragraphs, it may become necessary to change the crankcase oil more frequently.

Frequent long runs at high speed, with the resultant high engine operating temperatures, may oxidize the oil and may result in the formation of sludge and varnish. While no definite drain periods can be recommended under these conditions, they should be more frequent than under normal driving conditions.

Driving over dusty roads or through dust storms introduces abrasive material into the engine. Carburetor Air Cleaners decrease the amount of dust that enters the crankcase. The frequency of draining depends upon severity of dust conditions and no definite draining periods can be recommended, but should be more frequent than under normal driving conditions.

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Short runs in cold weather, such as city driving and excessive idling, do not permit thorough warming up of the engine and water may accumulate in the crankcase from condensation of moisture produced by the burning of the fuel. Water in the crankcase may freeze and interfere with proper oil circulation. It also produces and promotes rusting and may cause clogging of oil screens and passages. Under normal driving conditions this water is removed by the crankcase ventilator. But if water accumulates it should be removed by draining the crankcase as frequently as may be required.

It is always advisable to let the engine reach normal operating temperature before draining the crankcase. The benefit of draining is, to a large extent, lost if the crankcase is drained when the engine is cold as some of the suspended foreign material will cling to the sides of the oil pan and will not drain out readily with the slow moving oil.

Crankcase Dilution—Probably the most serious phase of engine oil deterioration is that of crankcase dilution, which is the thinning of the oil by fuel vapors leaking by the pistons and rings and mixing with the oil.

Leakage of fuel, or fuel vapors, into the oil pan mostly occurs during the warming-up period, when the fuel is not thoroughly vaporized and burned.

Automatic Control Devices to Minimize Crankcase Dilution

Your Chevrolet engine is equipped with automatic devices which aid greatly in minimizing the danger of crankcase dilution.

Rapid warming up of the engine is aided by the thermostatic water temperature control, which automatically prevents circulation of the water in the cooling system until it reaches a predetermined temperature.

Thermostatic heat control on the exhaust manifold, during the warming-up period, automatically directs the hot exhaust gases against the center of the intake manifold, greatly aiding the proper vaporization of the fuel.

The downdraft carburetor is an aid to easy starting, thereby minimizing the use of the choke. Sparing use of the choke reduces danger of raw, or unvaporized, fuel entering the combustion chamber and leaking into the oil reservoir.

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An efficient crankcase ventilating system drives off fuel vapors and aids in the evaporation of the raw fuel and water which may find its way into the oil reservoir.

Control by Car Owner Under Abnormal Conditions

Ordinarily these automatic control devices will minimize, or eliminate, the danger of crankcase dilution.

However, there are abnormal conditions of service when the car owner must aid in the control of crankcase dilution.

Short runs in cold weather, such as city driving and excessive idling, do not permit the thorough warming up of the engine or the efficient operation of automatic control devices. It is recommended that the oil be changed more often when the car is subject to this type of operation.

Poor mechanical condition of the engine, such as scored cylinders, poor ring fit, "sloppy" or loose pistons, faulty valves and poor ignition will increase crankcase dilution. Keep your car in good mechanical condition.

Poor fuels which contain portions hard to ignite and slow to burn will increase crankcase dilution. Use good fuel.

Water in Crankcase—Serious lubrication troubles may result in cold weather due to an accumulation of water in the oil pan. This condition is as a rule little understood by the car owner. To demonstrate the chief cause of water in the oil pan, hold a piece of cold metal near the end of the exhaust pipe of the engine and note the rapid condensation and collection of drops of water on it. The exhaust gases are charged with water vapor and the moment these gases strike a cold surface, they will condense, forming drops of water.

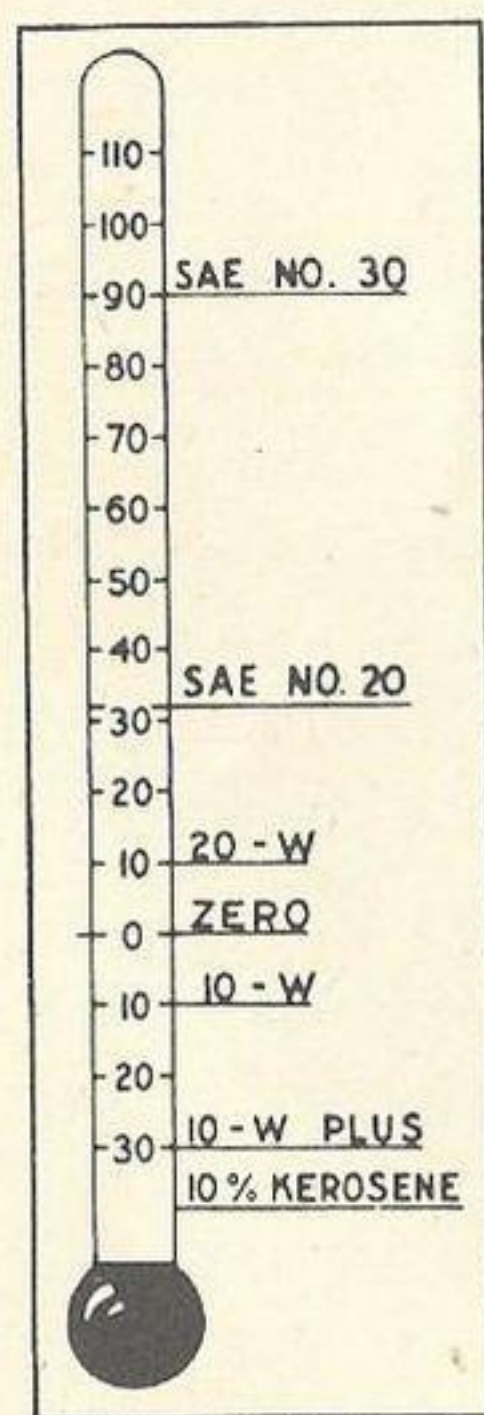
A slight amount of these gases pass the pistons and rings, even under the most favorable conditions, and cause the formation of water in the oil pan, in a greater or less degree, until the engine becomes warm. When the engine becomes thoroughly warm, the crankcase will no longer act as a condenser and all of these gases will pass out through the crankcase ventilator system.

Short runs in cold weather, such as city driving, will aggravate this condition.

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Corrosion—Practically all present-day engine fuel contains a small amount of sulphur which, in the state in which it is found, is harmless; but this sulphur, on burning, forms certain gases, a small portion of which is likely to leak past the pistons and rings and, reacting with water, when present in the crankcase, form corrosive acids. The more sulphur in the fuel, the greater the danger from this type of corrosion. This is a condition which we cannot wholly avoid, but it may be reduced to a minimum by proper care of the engine.

As long as the gases and the internal walls of the crankcase are hot enough to keep water vapor from condensing, no harm will result; but when an engine is run in low temperatures, moisture will collect and unite with the gases formed by combustion; thus, acid will be formed and is likely to cause serious etching or pitting. This etching, pitting or corrosion, when using fuel containing considerable sulphur, manifests itself in excessively rapid wear on piston pins, camshaft bearings and other moving parts of the engine, oftentimes causing the owner to blame the car manufacturer or the lubricating oil when in reality the trouble may be traced to the character of fuel used, or a condition of the engine, such as excessive blow-by or improper carburetor adjustment.



**Fig. 8—View of
Oil Temp
Thermometer**

Lubrication—First 500 Miles—The crankcase of the engine, as delivered to you, is filled with 10-W oil. Use this oil during the first 500 miles.

At the end of the first 500 miles, drain the crankcase—when hot—and refill to the proper level with the recommended oil.

Lubrication—After 500 Miles—After the first 500 miles the crankcase oil should be selected to give the best performance under your individual climatic and driving conditions.

Fall—Winter—Spring—During the colder months of the year an oil which will permit easy starting at the lowest atmospheric temperature likely to be encountered should be used. When the crankcase is drained and refilled, the crankcase oil should be selected not on the basis of the existing temperature at the time of the change, but on the lowest temperature anticipated for the period during which the oil is to be used.

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The viscosity grade of crankcase oil will, therefore, depend upon the climatic conditions under which your car is operated. The grades best suited for use in your engine at the various temperatures are shown in the following table:

If you anticipate that the lowest atmospheric temperature will be	use the grade indicated
Not lower than 32° F.	20-W or S.A.E. 20
As low as plus 10° F.	20-W
As low as minus 10° F.	10-W
Below minus 10° F.	10-W plus 10% Kerosene

10-W oil plus 10% kerosene is recommended only for those territories where the temperature falls below 10 degrees below zero for protracted periods.

Fig. 8 shows the data in the above table as it would appear on a thermometer—the lowest temperature at which the indicated grades of oil will permit easy starting.

NOTE: When in doubt, use the lighter grade of oil. We recommend the use of 20-W rather than S.A.E. 20 if you anticipate temperatures to drop to freezing.

Summer—The use of 20-W or S.A.E. 20 oils during the summer months will permit better all-around performance than will the heavier body oils, with no appreciable increase in oil consumption.

If S.A.E. 20 or 20-W oil is not available, S.A.E. 30 oil may be used if it is expected that the average prevailing daylight temperature will consistently be above 90° F.

Maintaining Oil Level—The Oil Level Rod (Fig. 9) is marked "Full" or "Add Oil." These notations have broad arrows pointing to the level lines.

The oil level should be maintained between these two lines; neither going over the "Full" line nor under the "Add Oil" line.

Check the oil level frequently and add oil when necessary.

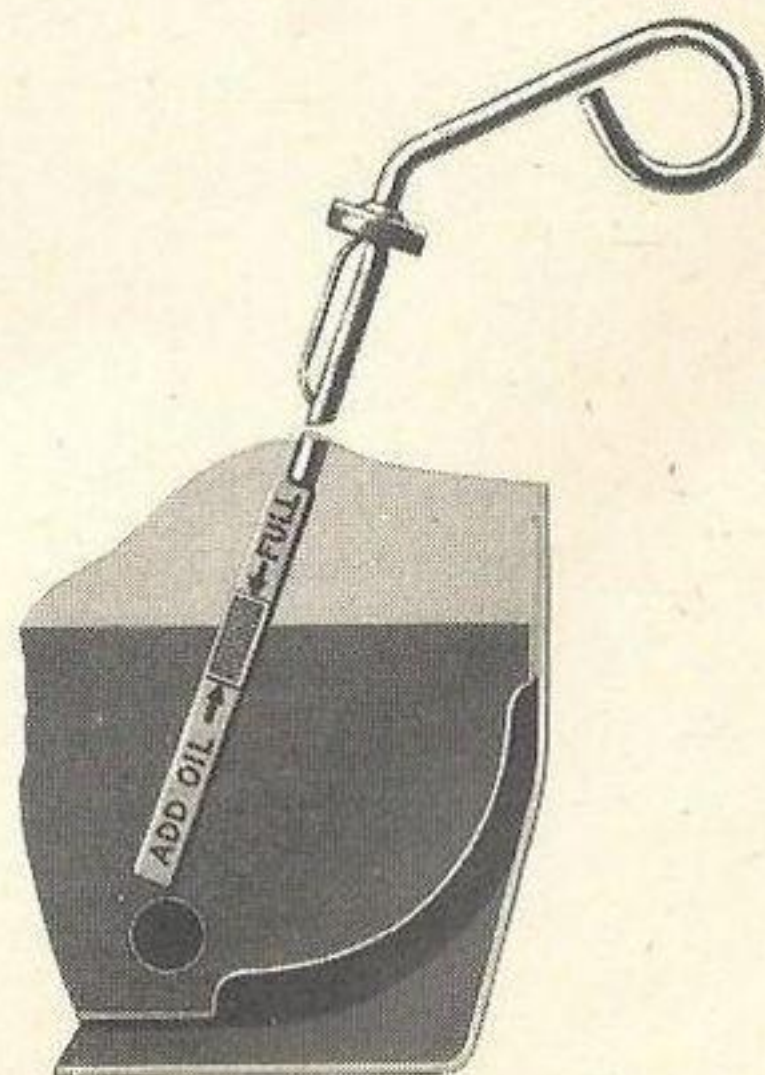


Fig. 9—Oil Level Rod in Pan

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Oil Pressure Gauge—When starting a cold engine, it will be noted that the oil pressure gauge on the instrument panel will register a high oil pressure. As the engine warms up, the pressure will drop until it reaches a point where changes to higher speeds will raise the pressure very little, if at all.

If the oil pressure registers abnormally high after the engine is thoroughly warmed up, an inspection should be made to ascertain if the oil lines and passages are plugged up.

WATER PUMP—The permanently sealed ball-bearing water pump does not require lubrication by the car owner.

REAR AXLE AND TRANSMISSION—The Passenger Car Hypoid Rear Axle operates under the most severe lubrication conditions at high speeds and requires a Hypoid Lubricant which will meet this condition.

Recommended Lubricants—Rear Axle S.A.E. 90 "All-Purpose" Gear Lubricant.

Transmission—S.A.E. 90 Transmission or Mineral Oil Gear Lubricant.

S.A.E. 90 "All-Purpose" Gear Lubricant.

CAUTION: Straight Mineral Oil Gear Lubricant must not be used in Hypoid Rear Axles.

The S.A.E. 90 viscosity grade is recommended for "year-around service." However, when extremely low temperatures are encountered for protracted periods during the winter months, the S.A.E. 80 viscosity grade may be used.

"All-Purpose" Gear Lubricant—
"All-Purpose" Gear Lubricants may be used in passenger car transmissions, steering gears, and in universal joints requiring a fluid lubricant.

"All-Purpose" Gear Lubricants must be carefully compounded and of the latest non-corrosive type and of proven quality. The Lubricant Manufacturer must be responsible for the satisfactory performance of his product. His reputation is your best indication of quality.

Lubricant Additions—The lubricant level in the housing should be checked periodically and while

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seasonal changes of the lubricant are not required, it is recommended that you have the housing drained, flushed and refilled with the recommended lubricant at least twice a year, or every 6,000 to 10,000 miles.

UNIVERSAL JOINT—The universal joint receives its lubrication from the transmission.

BRAKE AND CLUTCH PEDAL—The pedals, lubricated at the factory, should not require further lubrication. However, should the pedals operate "stickily," remove the plug and fill the reservoir with chassis lubricant. Do not get lubricant on nearby rubber parts.

REAR WHEEL BEARINGS—The rear wheel bearings are lubricated from the rear axle.

CHASSIS—For chassis lubrication, consult the lubrication chart, Fig. 10, which shows the points to be lubricated.

The term "chassis lubricant," as used in this manual, describes a semi-fluid lubricant designed for application by commercial pressure gun equipment. It is composed of mineral oil combined with approximately 8% soap, or soaps, which are insoluble in water.

HYDRAULIC BRAKE FLUID—Your Chevrolet dealer has the proper hydraulic brake fluid for the brake system of your car.

VACUUM POWER GEARSHIFT MECHANISM—This mechanism, lubricated at the factory, is well protected and should not require further lubrication under 15,000 miles. However, should the shifting become "sticky" the protecting boot should be inspected for leaks, at which time the levers should be lubricated with a graphite lubricant or chassis lubricant and the boot properly assembled.

REAR SPRINGS—The spring leaves are coated and the metal covers are filled with a special graphite lubricant at the time the springs are assembled.

Should the car owner find it necessary to lubricate the spring leaves, or refill the spring covers, a soft, smooth lubricant, to which 8% to 10% graphite has been added, or chassis lubricant may be used.

LUBRICATION POINTS

1. LOWER CONTROL ARM—Front (*2 each side*)—
Chassis Lubricant - - - - - 1,000 miles
2. LOWER CONTROL ARM—Rear (*1 each side*)—
Chassis Lubricant - - - - - 1,000 miles
3. UPPER CONTROL ARM—Front (*1 each side*)—
Chassis Lubricant - - - - - 1,000 miles
4. UPPER CONTROL ARM—Rear (*1 each side*)—
Chassis Lubricant - - - - - 1,000 miles
5. FRONT WHEEL BEARINGS—High Melting Point
Front Wheel Bearing Lubricant - - - - 10,000 miles
6. KING PIN (*2 each side*)—Chassis Lubricant - 1,000 miles
7. SHOCK ABSORBER—Front—
Shock Insulating Fluid - - - - - 5,000 miles
8. TIE ROD (*2 each side*)—Chassis Lubricant - - 1,000 miles
9. STEERING GEAR—Add Gear Lubricant When
Necessary - - - - - 1,000 miles
10. AIR CLEANER (*see page 18*) - - - - - 2,000 miles
11. TRANSMISSION (*see page 28*) - - - - -
12. SHOCK ABSORBER—Rear—
Shock Insulating Fluid - - - - - 5,000 miles
13. REAR AXLE (*see page 28*) - - - - -
14. REAR SPRING SHACKLE—Rear (*2 each side*)—
Chassis Lubricant - - - - - 1,000 miles
Do not lubricate rubber bushings.
15. GENERATOR (*2 oil cups*)—Light Engine Oil - 1,000 miles
Do not "over-oil"
16. DISTRIBUTOR (*1 cup*)—Chassis Lubricant - - 1,000 miles
17. STARTING MOTOR (*1 oil cup*)—
Light Engine Oil - - - - - 1,000 miles
Except those with aluminum end frame
18. CLUTCH AND BRAKE PEDAL SHAFT—Remove
Plug and Fill with Chassis Lubricant if
Operation Becomes Sticky - - - - -
19. VACUUM SHIFT CYLINDER (*see page 29*) - -
20. THROTTLE BELL CRANK—Light Engine Oil - 1,000 miles
21. CARBURETOR ACCELERATING PUMP SHAFT—
Light Engine Oil - - - - - 5,000 miles

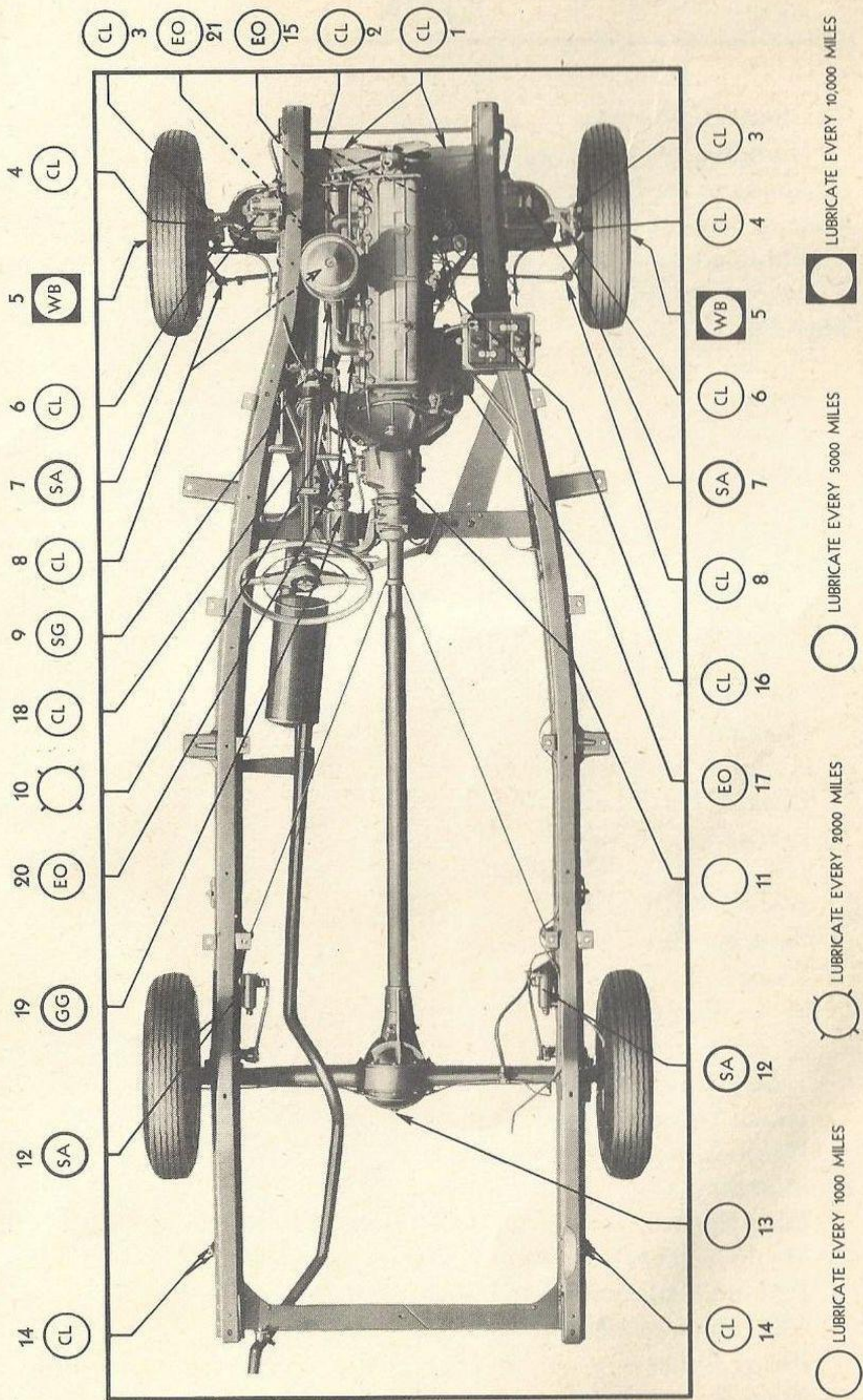


Fig. 10—Lubrication Chart

DATA

CAR SERIAL NUMBER

Stamped on plate attached to body right front hinge pillar above lower hinge.

ENGINE NUMBER

Stamped on boss on right center side of engine block to the rear of ignition distributor.

TIRE PRESSURE

Front - - - - - 26 lbs.
Rear - - - - - 28 lbs.

CAPACITY CHART

Gas Tank - - - - - 16 gals.
Cooling System - - - - - 15 qts.
Transmission - - - - - 1½ pts.
Differential - - - - - 3½ pts.
Engine - - - - - 5 qts.

LAMP SPECIFICATIONS

	Candle Power	Number
Headlamp - - - - -	45-35 Watts	Sealed Beam
Parking Lamp - - - - -	3	63
Tail and Stop Lamp - - - - -	21-3	1154
License Plate Lamp - - - - -	3	63
Ignition Lock Lamp - - - - -	1	51
Headlamp Beam Indicator - - - - -	1	51
Instrument Cluster - - - - -	2	55
Speedometer - - - - -	2	55
Clock - - - - -	2	55
Glove Compartment - - - - -	2	55
Dome Lamp (except Cabriolet and Station Wagon) - - - - -	6	82
Dome Lamp (Cabriolet) - - - - -	2	55
Dome Lamp (Station Wagon) - - - - -	6	81

LICENSE DATA

Bore (inches) - - - - - 3½"
Stroke (inches) - - - - - 3¾"
Piston Displacement (cu. inches) - - - - - 216.5
SAE Horsepower Rating - - - - - 29.4
Firing Order - - - - - 1-5-3-6-2-4
Max. Brake Horsepower - - - - - 90
WHEELBASE - - - - - 116"

