1932

HUDSON-ESSEX

SERVICE BULLETINS

I N D E X

FORM 6627

HUDSON-ESSEX
SERVICE BULLETIN

HUDSON-ESSEX LUBRICATION AND MECHANICAL INSPECTIONS

Subject: - Instructions for performing
"500 and 1500 Mile New Car Inspections".
(1932 Models)

.LUBRICATION

OPERATIONS

1. Chassis Fittings
   All chassis fittings (18 points) to have lubricant applied by means of a pressure gun.

2. Hood Ledge Lacings
   Saturate with motor oil. This will prevent hood squeaks and preserve the lacing.

3. Hood Locks
   Lubricate with motor oil. Inject a few drops of oil through hole in barrel just below handle and pull and release handle two or three times.

4. Fan
   The only lubricant that should be used in the fan is fiber grease, the same as is used in the universal joints. Do not overfill when using pressure or you will injure the seal. This type of grease possesses qualities which will prevent it being thrown from the fastly revolving fan.

5. Engine
   Proper lubrication of Hudson-Essex engines is secured by using a good grade of oil with medium heavy body, commonly called S.A.E. 30. During the winter months or where low temperatures prevail and S.A.E. 30 oil should be used which has a sub-zero cold test, i.e., it will pour a few degrees below zero. The characteristics of oil in this respect can be tested by placing some oil in a jar and leaving it exposed to outside air temperatures. The Owner's Manual calls for complete changing of engine oil at least every 2500 miles. The exact mileage period is left to the owner's discretion and should be influenced entirely by the service the car receives.

6. Door Locks and Dovetails
   Lubricate with motor oil or soap or the patented so-called "dry" lubricants sold on the market for this purpose. If oil is used be sure and wipe off excess. "Dry" lubricants have the advantage of presenting no oily surface that will dirty clothes or upholstery.

7. Generator
   Both cups in the generator should be lubricated with three or four drops of light motor oil. Do not attempt to supply more oil than is required.

8. Distributor
   The distributor base should be filled to the level of the oil cup with motor oil. The rotor cam should be coated with vaseline or light cup grease.

The pivots on which the breaker arms operate should receive only one drop of light oil. The distributor rotor should be removed and the wicking on top of the distributor shaft in the Hudson saturated with oil. There is no wicking in the Essex but insert two or three drops of oil. Then replace rotor.

9. Starting Motor

Both starting motor cups should receive three or four drops of light motor oil. Do not attempt to supply more oil than is required.

10. Throttle Rods

Oil or grease all accelerator connections. The throttle linkage should work with a snap indicating that all joints are free. Grease choke and throttle wires to eliminate sticking.

11. Clutch

A mixture of equal parts of light motor oil and kerosene is recommended for clutch lubrication. The proper quantity to put in the clutch housing is one-third of a pint. The 1932 Hudson-Essex clutches are designed to hold lubricant for long periods of time. It is a well known fact, however, that in its early days of operation a new clutch has a more absorbent effect on oil. It is advisable, therefore, to drain and replenish the clutch housing at the 1500 mile inspection, installing the proper quantity. Thereafter the clutch will operate for a long period without further attention.

12. Transmission and Free Wheeling

The proper lubricant to use in the transmission and free wheeling unit is mineral oil. Under no consideration should any compound be used, For winter or low temperature operation use S.A.E. 80 gear oil, In normal summer months use S.A..E. 90. For semi-tropical operation where extremely high temperatures prevail it is permissible to use an SA.E. 100 to 110. An oil heavier than S.A.E. 80 should not be used when near zero temperatures prevail. Lubricant should be maintained to the level of the test plugs on the right hand side of the transmission compartment and the free wheeling clutch compartment.

13. Universal Joints

Do not use any type of lubricant other than fiber grease sold specifically for this purpose. It is impossible to properly lubricate the universal joints with gear oil, steam cylinder oil or cup grease. Do not permanently install pressure fittings at this point or the propeller shaft will be thrown out of balance. Remove grease plug, temporarily install pressure fittings
with check ball removed and inject fiber grease until it is ejected or appears at the vent hole in the shaft which is opposite the filling hole. Then rev. move the fittings and replace original plug.

14. Rear Axle

The rear axle may be lubricated with the same heavy gear oil as is used in the transmission and free wheeling unit. The recommendations are S.A.E. 90 in summer or when warm temperatures prevail and S.A.E. 80 in the winter or when temperatures below freezing prevail.

15. Steering Gear

The steering gear should be lubricated with high grade gear oil of heavy body. Many oil companies specify and sell a gear oil specifically for this

purpose. Remove the filler plug oft top of the gear housing and pour in gear oil until compartment is filled.. Then replace plugs

16. Water Pump Shaft

The oil cup on the water pump shaft bushing should be filled with motor oil. Wipe off any excess so it will not get on the fan belt.

MECHANICAL INSPECTIONS

OPERATIONS

1, Fan Belt

The fan belt should not be adjusted too tightly as this will place a severe load on the parts. The Essex fan belt Is in proper adjustment when finger pressure below the fan pulley enables you to pull the belt so it lacks but three-quarters of an inch of touching. To adjust the triangular belt lay-out in the Hudson lay a straight edge on the fan and water pump pulleys and be sure and have the adjustment so this section of the belt can be pushed down with the finger approximately five-eighths of an inch below the straight edge. Be sure the fan is properly set on the fan studs so the pulley is in line with the belt rotation. This will prevent premature wear of the belt.

2. Carburetor

Do not attempt to change the adjustment on the carburetor until the spark plugs have been cleaned and properly set, distributor breaker points cleaned and set, and all residue in gasoline passages removed,, Read-just the idling speed of motor if necessary. After each adjustment of the idling screw open and close the throttle suddenly and note if there is any tendency of the engine to stall proper adjustment of the carburetor air screw (the large knurled brass nut) will be approximately the position where the end
of this screw and the holding spring is flush, This is a normal adjustment and the final setting should be within one-half turn of this point. When the engine is properly warmed upturn the air screw out until the engine hesitates, then one notch at a time until the engine runs smoothly. While making this adjustment it is advisable to frequently snap the throttle to clear the carburetor jets. Bear in mind that a richer mixture than described above will waste gasoline, while a leaner mixture will not give greater mileage because the throttle will have to be opened farther to attain the same speed. The carburetor air cleaner should be cleaned in gasoline and re-oiled if the car is being operated on very dusty roads, Proper setting of the idling screw will give seven miles per hour in high gear on level roads.

3, Generator Charging Rate

To check the generator charging rate disconnect the line at terminal on generator and insert accurate ammeter. The proper charging rate when battery is in normal charged condition and generator is not hot, i.e., car has not been driven for an hour or so, will be seventeen amperes.

4, Generator and Starter Connections

Tighten the electrical cable connections on generator and starter switch. Examine cables for faulty installation which might cause ground or short circuit.

5. Generator Relay

The points should close at a car speed of approximately ten miles per hour, (Notes When the relay points close the AMP telltale on the instrument board will go out).

6. Generator Holding Band

Tighten the generator holding clamp screw so that the generator is hold securely on its bracket.

7. Ignition Distributor Points

The breaker points should be clean, present a flat surface to each other and spaced .020" when at their maximum opening. A special breaker point stone or file should be used for dressing the points. Place stone or file between the points and move stone or file up and down, dressing both points at the same time, The breaker points on the Hudson should be synchronized in accordance with instructions appearing on page twenty-five of the Owner's Manual.

8. Lamp Inspection

Operate switches and brake pedal to see that stop lights, tail lamps, head lamps and side lamps all light when the switches are placed in their respective positions. Make sure that OIL and AMP telltales on instrument board light when the ignition switch key is turned to the left with the engine not running.

9, Clutch pedal Adjustment

A clearance of three-quarters of an inch Must be maintained between the clutch pedal shank and toe board. If necessary, adjust clearance by means of the adjusting link.

10, Rear Wheels Tight on Taper

Remove wheel cap and cotter pin from axle shaft castle nut. Using a suitable socket wrench draw up the nut so the wheel hub will be tight on taper. Replace cotter pin.

11, Tighten all Wheel Bolts

The wheel caps should be removed from all four wheels and the five wheel holding cap screws tightened. perform this operation by turning each bolt slightly until they are all uniformly tightened.

12. Adjust Door Strikers

Adjust door lock striker plates so that doors when closed are tight enough to prevent rattle without being difficult to open.

13, Battery

Thoroughly clean and tighten battery terminals and coat with vaseline to prevent corrosion, Tighten battery holddowns so that battery will be solidly held in tray. Add distilled water to cells if necessary.

14. Inflate Tires

Tires, both front and rear, should be inflated to 32 pounds pressure for ordinary driving and 40 pounds pressure for high speed driving. It is extremely important that both front tires are inflated to exactly the same pressure. This will prevent the so-called "tramping" action which is often occasioned by unequal tire pressures in front tires,

15. Radiator

Carefully check all hose connections and cylinder side plate gaskets for leaks, Add water During the winter months add anti-freeze of the same type as in system to bring level up to proper height.

16, Spark Plugs

When resetting the gap of spark plugs make all adjustments by moving the side wire. Do not bend the center wire as this may break the porcelain. Never use more than one spark plug gasket,, The spark plug manufacturers recommend cleaning the plugs with alcohol, metal polish or equal parts of ammonia and water, For cleaning the porcelain use a piece of wire coven• ed with one thickness of cloth. Do not scratch with knife or any other instrument as this will injure the porcelain surface

17. Tappets

See that all tappet clamp screws are tight. Adjust tappets, if necessary; to give the following clearances - exhaust .006", intake .004". Apply oil to valve stems and tappets with oil can before replacing valve tappet cover plate.

18. Water pump Gland

Do not, under any consideration, use a wrench for tightening the water pump gland nut. Leaks can be stopped by adjusting with fingers only A greater pressure than this might cause the shaft to be cut and would place a heavy load on the fan belt.

19. Timing Chain

When performing the 1500 mile inspection the timing chain should be adjust,' ed so it has approximately one-eighth of an inch movement on the circumference of the front generator drive coupling Thereafter the chain will only require adjustment at infrequent intervals.

20. Instruments and Signals

Check gasoline and oil reservoir gauge to see that they are registering on the instrument board. Make sure that both AMP and OIL telltales light when ignition switch is turned to the left and that they both go out when the engine speed exceeds idling.

21. Pitman Arm Tight on Shaft

The Pitman arm should be securely drawn up on the cross shaft by tightening the holding nut.

22, Drag Link

Inspect steering connections at front and rear end of drag link to make sure that the adjusting plugs are In proper position and that there is no excess play,

23. Body Bolts

Tighten all body hoedown

24. Front Wheel Bearing Adjustment

Check wheels and test for excess play in front wheel bearings. Adjust if necessary.

25. Brakes

If the brake pedal travels to within one and one-half inches of the toe board the brakes should be adjusted. (See page thirty-two of the Owner's Manual).

26, Steering Gear and Thrust Adjustment

Side play in the cross shaft or thrust adjustment is taken care of the same as on previous Hudson-Essex steering gears. Loosen the lock nut and with the screw driver turn the adjusting screw in as tightly as possible, then back off slightly and tighten lock nut. Make sure that all steering gear to frame bracket stud nuts are tight.

27. Shock Absorbers

When performing the 1500 Mile Inspection it is advisable to fill the shock absorbers with oil, using that specifically recommended by the manufacturer. Use Gabriel oil on Hudson shock absorbers and Monroe on Essex shock absorbers, Be sure that all shock absorbers are tight on frame and that there is no play in the linkage.

28. Ride Control

Make sure that the ride control works freely and that the wires which operate the shock absorber valves are tight and set so the arms rest against stop when ride control button is all the way in on the instrument board,

29. Spring Clips

Thoroughly tighten spring clip nuts on all four springs, front and rear,

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NOTE: You will be supplied with pads for performing 500 and 1500 Mile Inspections on 1932 models, D.S.2048

FORM 6627

HUDSON-ESSEX
SERVICE BULLETIN

January 25, 1932

RE: - 1932 SPECIFICATIONS FOR LICENSING PURPOSES

For your information, we are listing below specifications on this Company's 1932 models now being manufactured and shipped:

GREATER HUDSON EIGHT:

	Serial Numbers	No. of Cyl.	Bore	Stroke	N.A.C.C. H.P. Rating	Seating Cap.	Wheel Base	Shpg. Weight
Standard Series -								
Standard Sedan	930,770	8	3"	$4\frac{1}{2}$"	28.8	5	119"	3285
Coach	&	8	3"	$4\frac{1}{2}$"	28.8	5	119"	3190
Town Sedan	up	8	3"	$4\frac{1}{2}$"	28.8	5	119"	3270
Sterling Series -								
Suburban	62,884	8	3"	$4\frac{1}{2}$"	28.8	5	126"	3350
Special Sedan	& up	8	3"	$4\frac{1}{2}$"	28.8	5	126"	3415
Major Series -								
Brougham	250,001	8	3"	$4\frac{1}{2}$"	28.8	5	132"	3560
Club Sedan	& up	8	3"	$4\frac{1}{2}$"	28.8	5	132"	3555
ESSEX SUPER SIX:								
Standard Sedan	1,281,685	6	2-15/16"	$4\frac{3}{4}$"	20.7	5	113"	2980
Coach		6	2-15/16"	$4\frac{3}{4}$"	20.7	5	113"	2860
4-Pass. Coupe	&	6	2-15/16"	$4\frac{3}{4}$"	20.7	4	113"	2840
Town Sedan		6	2-15/16"	$4\frac{3}{4}$"	20.7	5	113"	2950
Special Sedan	up	6	2-15/16"	$4\frac{3}{4}$"	20.7	5	113"	3010

D.S.2050
Supplement 1

FORM 6627

HUDSON-ESSEX
SERVICE BULLETIN

January 26, 1932

RE: - WINDSHIELD RUBBER BUMPER

There have been called to our attention some cases of noise developed in Hudson built bodies which has been traced to the windshield frame sticking to the pillar post rubber bumper, Number 95477. A new bumper with a felt face is now available through your distributor and should be installed in all cars which were originally equipped with the plain rubber bumper.

Advise your distributor immediately your requirements to take care of the cars in your territory so that the necessary stock can be obtained promptly.

D.S.2053

FORM 6627

HUDSON-ESSEX
SERVICE BULLETIN

January 27, 1932

RE: CARE OF STORAGE BATTERIES

Everything possible is done at the factory to see that fully charged batteries are installed in cars when they are delivered to the carriers. The use of the batteries during necessary testing and inspection work results in some unavoidable discharge. Because batteries discharge while standing idle additional losses will occur when in transit to destination. If they are allowed to remain discharged, conditions are set up in the plates such that the generators may be unable to recharge the batteries under normal car operating conditions.

Batteries in cars in your stock should be charged at least every thirty days. Be sure that every battery shows a reading with an accurate hydrometer of between 1270 and 1290 at room temperature, or 70° Fahrenheit, when the car is delivered to the purchaser.

The batteries in Hudson and Essex cars are designed with reserve storage capacity to take care of abnormal conditions. However, if you allow the batteries to go into the hands of owners after they have been standing for some time without attention, you are nullifying much of the effect of this additional storage capacity as you have allowed the batteries to reach such a condition that the plate material is not readily available for storing electrical energy. You can only be assured of delivering to your owners long life and trouble- free battery operation which the equipment is designed to give if you make sure the batteries are fully charged when the cars are delivered.

It is not necessary to remove the batteries from the cars to charge them if you have AC lighting current available. Equip your new car department or your storage building with a five ampere, six volt bulb charger or any portable charger that will operate from the running board to the main battery terminal on the Startix unit and car frame. Connect the charger plug to the nearest electrical outlet and continue the charge from ten to twelve hours. Before starting this charge check the water level in each battery cell, adding distilled water, if necessary, to bring the level about three eights of an inch above the separators. Water added after the charge will not mix and may freeze if the storage room is not heated. After this initial filling of water, the battery may be charged every month for three consecutive months without adding water. Thereafter the charging of the batteries will only require lifting the hood and attaching the charger clips.

The method which must be used where alternating current is not available in the storage building is to remove the batteries from the cars and either arrange a storage space in your own service department where the batteries may be recharged periodically, or arrange with a reputable battery concern to take care of this charging for you. Wherever possible, it is preferable to arrange to have the dealer in your town handling Exide batteries take care of this charging.

IF CARS ARE ALLOWED TO GO INTO SERVICE WITH BATTERIES PARTLY DISCHARGED, YOU ARE COURTING STARTING FAILURES, SHORT BATTERY LIFE AND CUSTOMER DISSATISFACTION.

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D.S.2056

FORM 6627

HUDSON-ESSEX
SERVICE BULLETIN

February 4, 1932

RE: -- LUBRICATION

Lubrication specifications have been changed as follows: --

TRANSMISSION
(Summer) - Was S.A.E. 90 - use S.A.E. 110
(Winter) - No change - use S.A.E. 80

REAR AXLE
(Summer) - Was S.A.E. 90 - use S.A.E. 110
(Winter) - Was S.A.E. 80 - use S.A.E. 90

These new specifications will appear in the next issue of the Hudson and Essex Instruction Books.

D.S.2059

FORM 6627

HUDSON-ESSEX
SERVICE BULLETIN

February 16, 1932

RE: TRANSMISSION CONTROL LEVER

Noises developed in the transmission control lever have been traced to insufficient tension of the anti-rattle springs (Number 37571 control cable end anti-rattle spring and Number 37575 control cable lock plunger anti-rattle spring.) The correct arch of these springs in the free position is 1/4 inch. Should springs be found with less arch they should be replaced with new ones.

The following operations cover removal and re-installation of parts in the control assembly. (Refer to Page 30 Essex Parts List or Page 32 Hudson Parts List for illustration.)

Remove bolts from transmission cover and set cover in vise.
Remove free wheeling lever to return spring plunger clevis pin.
Remove free wheeling fulcrum sin and retainer.
Remove free wheeling return spring assembly.
Remove control lever anti-rattle spring.
Remove control lever fulcrum cover and screws.
Remove control lever fulcrum socket cover spring seat and retainer.
Remove control cable bushing lower (sweated on) and oil retainer.
Remove control lever upper end pin.
Remove control cable lock plunger pin.
Remove control cable lock button spring and plunger.
Install cable lock plunger pin.
Install control cable (check anti-rattle springs in knob.)
Install control lever upper end pin. (Pin must pass through groove in conduit upper ferrule.)
Install control lever bushing lower and oil retainer.
Install control lever fulcrum socket cover, spring seat and retainer pin.
Install control lever fulcrum cover and screws in transmission cover.
Install control lever anti-rattle spring.
Install free wheeling lever return spring.
Install free wheeling lover fulcrum pin and retainer.
Install free wheeling lever return spring plunger clevis pin.
Install transmission cover on transmission.

NOTE: - When installing control cable sleeve at fulcrum plate set control in free wheeling position.

D.S.2060

FORM 6627

HUDSON-ESSEX
SERVICE BULLETIN

February 18, 1932.

RE: -- DOOR STRIKER PLATES

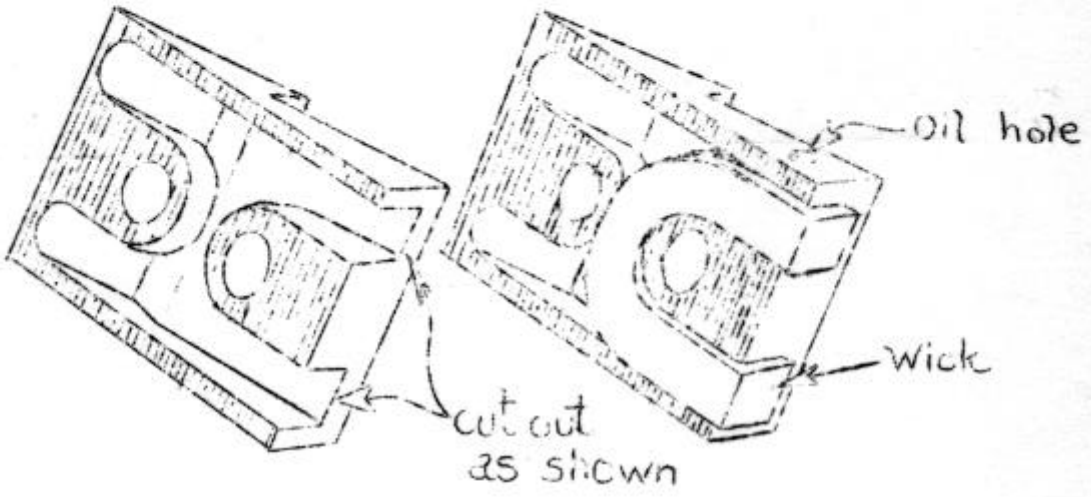
We recommend that all front and rear door striker plates be reworked as shown in the sketch and a felt wick used to hold a quantity of lubricant on the latch bar at all times to prevent door noises which have developed in some 1932 Hudson built bodies.

The wick can be made from a piece of Number 65404 front wheel felt cut so that the ends extend 1/16" beyond the face of the striker plate to insure contact with the latch bar.

The wick should be saturated with oil before installation. The 1/16" hole drilled in the top face of the striker plate will readily permit addition of oil as required.

Since practically all body noises which have developed in 1932 bodies are due either to the windshield bumpers as covered by Service Bulletin D.S.2052 or striker plates, we believe that if these two conditions are corrected no other operations will be necessary.

D.S.2061


oil hole
wick
cut out
as shown

FORM 6627

HUDSON-ESSEX
SERVICE BULLETIN

March 1, 1932.

RE: -- LOCK CYLINDERS

The lock cylinders are held in place in the door handles, rear deck handles, electrolocks and spare tire locks on 1932 Hudson and Essex cars by a snap lock. By turning the key to the unlocked position (right position of the electrolock) the snap lock comes in line with a small hole drilled in the lock cylinder chamber. This hole is on the underside of the door handle and the electrolock on the front of the deck handle shanks and the side of tire lock housing about one inch from the key hole end.

The snap lock can be pushed out of engagement by inserting a wire in the hole and pulling outward on the lock cylinder with the key held so that it binds in the key hole with the lock cylinder in the unlocked position.

The key numbers are stamped on the lock cylinders and can be seen only when the cylinders are removed.

D.S.2963

FORM 6627

HUDSON-ESSEX
SERVICE BULLETIN

March 2, 1932.

RE: -- BRAKE ADJUSTMENT

We wish to call your attention to the Brake Service Instructions which have already been forwarded you.

In following these instructions particular attention should be paid to adjusting the length of the brake cables. These cables will stretch less under operating loads than rods as formerly used so that it is essential that the cables be drawn taut before attaching to the cross shaft if equal brake action is to be obtained.

In order to obtain a softer brake pedal action the cable hook-up has been changed in our production. Where this effect is desired in cars built prior to February 5, 1932, the same hook-up should be used, namely --

BRAKE PEDAL TO CROSS SHAFT CABLE: -
Front end -- connect to lower hole in pedal.
Rear end -- connect to center hole in cross shaft lever.

REAR BRAKE CABLE: -
Front end -- connect to lower hole in upper end of cross shaft and levers.

FRONT BRAKE CABLE; —
Rear end -- there is only one hole provided in the lower end of the cross shaft end lever. This is the correct location on all 1932 Hudson and Essex cars.

When a still softer pedal is desired the brake pedal to cross shaft cable (rear end) can be connected to the upper of the three holes in the cross shaft lever.

If a clicking noise is experienced when brakes are applied it is evident that the shoes are not fully released by the spring pressure. This can probably be traced to dragging of the shoes on the backing plate locating bosses. A small amount of vaseline on these surfaces will relieve this binding and remove the noise if the shoes are properly adjusted according to the instructions already forwarded.

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D.S.2065

FORM 6627

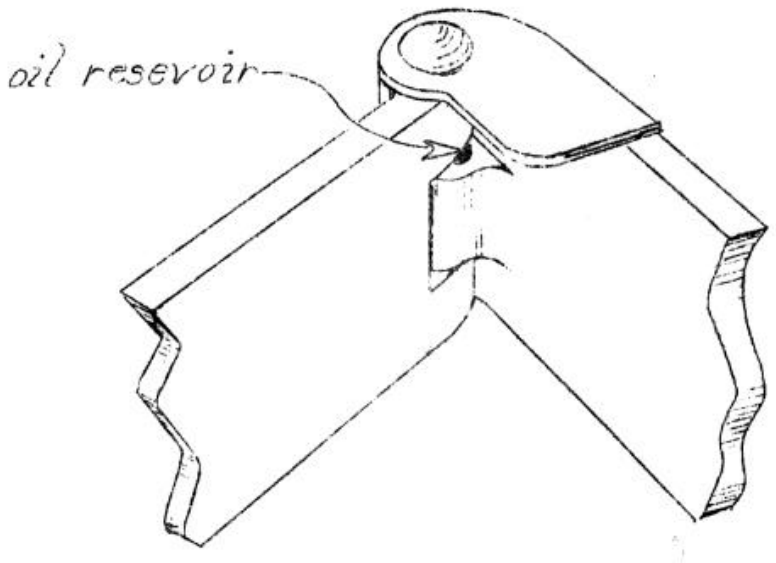
HUDSON-ESSEX
SERVICE BULLETIN

March 2, 1932

RE: LUBRICATION OF DOOR HINGES

An oil reservoir is provided in the top of the male half of the door hinges of all 1932 Hudson built bodies. By opening the door and inserting the spout of an oil can between the two halves of the hinge, oil can be supplied to the oil reservoir from which it will be fed to the hinge pin.

The location of the oil reservoir is shown in the illustration below: --



D.S.2066

FORM 6627

HUDSON-ESSEX
SERVICE BULLETIN

March 29, 1932

RE: -- AC SPARK PLUG TESTER

We are attaching a leaflet descriptive of the new AC Spark Plug Tester, a device which quickly tests spark plugs under actual operating conditions and tells at a glance whether the plugs require cleaning, re-gapping or replacement.

It is a valuable adjunct to your motor tuning department and will save an appreciable amount of time over methods in common use. The tester is nominally priced and is available through your regular source of supply in combination with spark plug assortments. Please refer to them for prices.

Supplementing the brief instructions appearing on the reverse side of the leaflet please note -

Hudson Super-Power Dome - Position 3
Essex Super-Power Dome - Position 3

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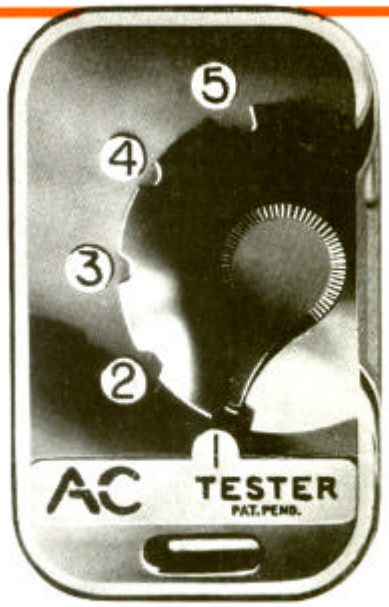
D.S.2071

AC SPARK PLUG TESTER

An instrument that tests Spark Plugs IN THE ENGINE



THE new AC spark plug tester is dependable — it tests the plugs in the engine while it is running — under true operating conditions.

It shows whether plugs miss at high speeds or under heavy load, or don't fire at all, or whether they need re-gapping.

It enables the dealer to show the car owner the true condition of spark plugs without removing them from the engine: to show him why worn spark plugs waste 1 gallon of fuel in every 10 and why new plugs should be installed.

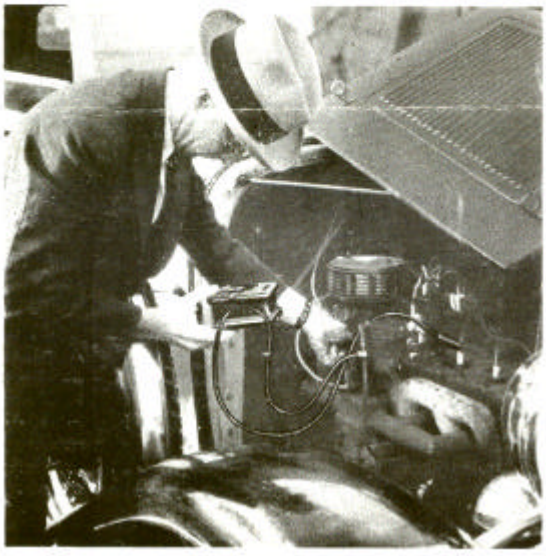
CHANGING SPARK PLUGS EVERY 10,000 MILES NO LONGER CAN BE CALLED A MERE SALES IDEA

Recently the Department of Engineering Research of the University of Michigan observed and checked road tests on several cars, which showed an average improvement of almost ten per cent in fuel mileage when plugs which had been used over 10,000 miles were replaced by new ones.

Flowmeter tests conducted before the S. A. E. meeting in Pittsburgh, and before numerous dealer gatherings, have demonstrated beyond all doubt that worn spark plugs used more than 10,000 miles, waste 1 gallon of gasoline in 10.

Every dealer now can see that his car owners get full gasoline mileage as well as full-power performance.

All that has been lacking to sell quickly the need for new spark plugs every 10,000 miles, was a spark plug tester that actually tested plugs in the engine, under its own power, compression and ignition conditions. In the AC spark plug tester, that is exactly what the dealer has. This new tester will save him time. It will enable the dealer to do a better job and actually satisfy his customers that they should have new spark plugs. It isn't intricate—it is easily used. It comes complete with instructions.



PRICE: **Available through your regular spark plug source of supply with 100, 50 or 40 AC Spark Plug Assortments.**

AC Spark Plug Testers are packed in individual cartons, with complete description and instructions for operation. The tester is compact (fits the coat pocket), and easy to use. Case is made of bakelite, size 3" wide, 4" high and 2¼" deep, with 5 feet of "ground" wire, and 5 feet of high tension cable. Wires have "snap-type" connectors, with rubber sleeve over connector on high tension wire to prevent shock. Total weight 18 ounces.

HOW THE AC TESTER FUNCTIONS

The AC Tester is made up of four conductor units of varying value, a flasher tube, and two connecting wires—one to ground on the motor and the other to the spark plug.

The purpose of the conductor units is to create the same operating conditions in the engine as the plug would normally encounter under speed and load. The four *varying* conductor units are needed to meet varying conditions which exist in different engines.

These conductor units are "cut in" by moving a pointer switch. Each conductor contact point is numbered. These numbers run from one to five—No. 1 has no conductor value. Each succeeding number has a slightly higher conductor value than the one preceding.

The flasher tube, when used with proper setting of the pointer, will signal whether or not the plug will spark under speed or load conditions. It also will signal a plug that is weak and will fail shortly. This signal varies in intensity according to the condition of the plug.

The two wires are colored black and red. The red wire is a ground wire and is attached to any clean metallic part of the engine. The black wire is to be attached to the spark plugs, one at a time.

What Happens When Test is Made

When the proper conductor unit is cut in and the wires to "ground" and plug attached, the conductor unit steals spark energy, as does a fouling coat over the spark plug insulator. This simulates operating conditions under speed and load so that if the plug being tested is already partially fouled, or oxide coated, the part of the spark energy lost through this fouling or coating, plus the part stolen through the conductor, will cause the plug to miss just as it will when motor is operated at a high rate of speed, on a hill, or under heavy load.

By making the test while the motor is operating, the plug is tested under its actual heat. By quickly accelerating the motor in making the test, compression is stepped up so that the plug is subjected to operating compression conditions such as exist in the engine when propelling the car.

If the plug being tested is in such a condition that it will miss in actual operation under speed or hard pull, a similar miss will be caused by the combination of stealing of current by the conductor unit and the action of quick acceleration in the test.

A plug that tests as missing should be removed from the engine and a new plug installed in its place, then test repeated. The new plug will fire perfectly, showing that the old plug was actually missing and should have been replaced.

Brief Instructions for Using THE AC SPARK PLUG TESTER

Dealers should read carefully the detailed description and instructions included in the tester package

1 Run the engine until normally "hot."

2 Set the throttle at very low idling position.

3 "Ground" the red wire on any clean metallic part of engine. Clamp the black wire to the terminal of plug to be tested. Do not disconnect ignition cable.

4 Set "pointer" knob at correct number, as follows:

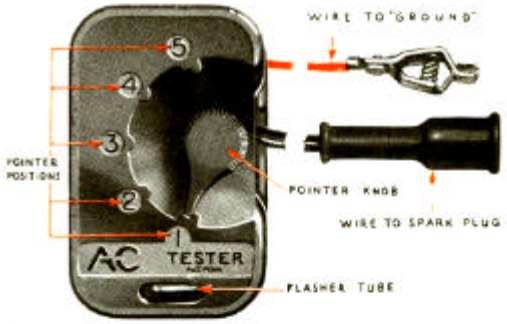
For all Passenger Cars except the following . . . . . Position 3
For 1930, 1931, 1932 Models of Buick, Cadillac-12, Essex and Ford . . . . . Position 4
Austin . . . . . Position 5
For trucks, buses and all special tests, find the correct tester knob position by proceeding according to instruction 7 below.

5 Open throttle wide for an instant, allowing engine to accelerate quickly.

6 Watch flasher tube *only while engine is building up speed*. If the flash dims or disappears, the plug is missing.

Bright red flash during quick acceleration. Plug is in good condition.

Dull red or no flash during quick acceleration. Plug is missing.



7 For trucks, buses and all special tests, find the correct tester knob position as follows:

Put a new AC plug of the correct type in one cylinder and connect tester on the new plug the same as for a regular test. Set tester knob at position 2 and test the new plug as described above. Repeat test at position 3 and upward until a position is reached where the flasher shows that the new plug is missing. The CORRECT knob position for testing plugs in that engine will be ONE position lower. Example: If new plug is missing at position 4, the CORRECT testing position for that engine would be No. 3.

EXCEPTION: If tester indicates new plug is firing after knob has been advanced to highest position (No. 5) the CORRECT testing position for that engine is No. 3.

NOTE: If tester indicates new plug missing at position 2, this immediately indicates trouble is in ignition system, which should be corrected before proceeding with plug test.

AC Spark Plug Company, FLINT, Michigan.
Form A-548 Printed in U. S. A. March, 1932 (55)

FORM 6627

HUDSON-ESSEX
SERVICE BULLETIN

July 27, 1932

RE: - RADIATOR DRAIN PETCOCKS

Under certain conditions it is possible for the handle on the radiator drain petcock on the Essex Terraplane to strike the engine side pans as the engine moves in the mountings. This contact will eventually turn the handle enough to permit water to be lost from the radiator.

We therefore suggest that the petcock handles be shortened so that they do not extend below the lower end of the petcock body.

When replacing the hose connections while performing service operations the tube carrying the petcock should be pushed up on the hose connections so that good clearance is maintained with the engine side pan.

D.S.2076

FORM 6627

HUDSON-ESSEX
SERVICE BULLETIN

August 10, 1932

RE: BENDIX STARTER DRIVES

Effective with motor Number 12178, all Terraplane models are fitted with a new design Bendix starter drive (consisting of the gear, shaft and spring.) Through the cooperation of the Electric Auto-Lite Company of Toledo, Ohio, and affiliated service stations the standard drives used on the first Terraplane models will be replaced as follows:

(A) If the car or the starting motor is delivered to their service station, the drive will be replaced at no charge for either material or labor.

(B) Where the above procedure is not practical due to location of dealer, et cetera, then the Auto-Lite distributor will supply you with the new design drive for shipment to the dealer and will accept the old drive, when returned in its entirety, for full credit. No labor allowance will apply on drives changed in this manner.

It is to our mutual advantage to have the starter drives changed as rapidly as possible, and we suggest - -

1. That you first concentrate on your demonstrators, cars delivered on which owners have voiced objection to the starter gear restriking the flywheel, and new cars in stock.

2. Arrange for the replacement of drives on all cars in owners' hands, at a time when their cars are in your service station for inspection or other work. There will be no necessity of campaigning owners to bring their cars for this specific purpose, and exchanges should preferably be made without unnecessarily disturbing the owner.

D.S.2077

FORM 6627

HUDSON-ESSEX
SERVICE BULLETIN

August 9, 1932

ESSEX TERRAPLANE SERVICE HINTS

CLUTCH PEDAL CLEARANCE. The clutch linkage should be adjusted so that the clutch pedal can be moved down from its normal disengaged position 1-1/2 inches before the clutch linkage is operated. This measurement should be taken by pulling the clutch pedal down from the toeboard and measuring 1-1/2 inches from the toeboard down to the rubber biscuit. This clearance is adjusted by changing the position of the yoke on the clutch pedal to cross shaft lever rod. (See page 12 of Instruction Book.)

Should it be impossible to obtain this clearance in vacuum clutch equipped jobs without reducing the clearance between the vacuum clutch cross shaft lever and the frame X member to less than 3/16" when the clutch is disengaged, the clutch cross shaft assembly pedal rod and link assembly and control link should be replaced with the following parts, which are now in use in standard production:

41055 Clutch Cross Shaft and Bracket Assembly
41057 Clutch Control Link
41064 Clutch Control Rod Assembly.

When installing these parts, check alignment of cross shaft inside lever and clutch throwout yoke lever to be sure that the endwise play of link 41057 is sufficient to absorb sidewise movement of the engine in the mountings.

When checking pedal clearance on vacuum clutch controlled jobs, check to see that the vacuum control cable does not strike the bleeder tube (small tube) when the clutch is disengaged by use of the foot pedal. If necessary, bend the pipe down until clearance is obtained.

IGNITION TIMING. The ignition timing is set in our production to a mark on the flywheel which is 3/4 inch ahead of dead center position. This is done in anticipation of wear on the distributor arm block, which will retard the ignition.
You will find that with the standard head and Ethyl fuel you will be able to obtain best performance by setting the timing near the mark, which is 3/4 inch ahead of dead center; while with standard gas in a standard head and Ethyl gas in the Super Power Dome head it will be necessary to retard the spark nearer to the dead center position to prevent excessive detonation. All ignition timing setting should be checked by road test.

REAR WHEEL PULLER: Do not under any consideration use a "knock-out" type of wheel puller, or strike the end of the Essex Terraplane axle shaft with a hammer, as this throws an excessive load on the thrust spacer and differential gear pin. A suitable wheel puller can be obtained from Hinkley-Meyers Company, Jackson, Michigan, by ordering part #J-446. The list price of this part is 22.95.

WHEEL HUB CAP. It is recommended that a small quantity of grease be put on each of the hub cap retaining springs to prevent squeaks from a slight motion which may develop between the hub cap and the hub.

TIRE PRESSURE. The tire pressures recommended are 28 lbs. front and rear for average driving, and 36 lbs. front and rear for high speed driving. This recommendation supersedes the one carried in Instruction Books and on windshield stickers and will be found to be much more desirable from a standpoint of comfortable riding. Front tire pressures must be equal.

SPRING SHACKLE ADJUSTMENT & LUBRICATION. Tighten the front spring shackle bolt until the distance from the outside face of the shackle to the underside of tension spring is 3/8 inch. This distance on the rear spring shackle should be 3/32 inch. A tight adjustment will restrict spring action, while loose adjustment will cause unsteadiness. The Hinkley-Meyers Company will very shortly be able to supply a gauge for checking this adjustment.

The shackle pins are hollow and act as reservoirs to give a continuous supply of lubricant to the bearing -surfaces. It is therefore essential that a fluid oil (not grease) be used. We recommend S.A.E. #110 gear oil in summer, and S.A.E. #90 gear oil in winter.

REMOVING IGNITION LOCK CYLINDER. Disconnect the battery wire which leads from the starting motor to the light switch before attempting to remove the ignition lock cylinder. By inserting a wire in the small hole at the edge of the lock cylinder and pressing down the plunger, then turning the key to the left from the "off" position, cylinder can be withdrawn.

HORN WIRE LOCATION. In order to relieve the ignition circuit of the comparatively heavy amperage drawn by the horn, it is recommended that the horn to ignition coil wire be shortened and reconnected from the horn to the terminal on the starting motor.

HEADLAMP CONNECTORS. When replacing headlamp connectors, be sure that the insulating sleeve completely covers the connector and any of the bare wire which may be exposed, to prevent the possibility of a short circuit to the frame.

HEAT INDICATORS. When installing heat indicators on engines equipped with Super Power Dome heads, use only heat indicator #100490. It is essential that this indicator be installed to insure sufficient length to prevent excess strain and possible breakage due to the flexing of the motor mountings. Heat indicator #100489, which has a shorter tube, is satisfactory for use only on engines equipped with standard cylinder heads; however all future shipments from Service Stock will include only the #100490 heat indicators.

ACCELERATOR SHAFT SPRING. By assembling part #41082 Anti-Rattle Spring to the bolts which hold the accelerator cross shaft brackets to the body dash so that they press the rod array from the dash, the possibility of a rattle due to excess radial clearance will be prevented. Two of these springs have been assembled on all Essex Terraplanes, beginning with serial #354774.

AIR CLEANERS. The internal construction of air cleaner has been revised to hold the parts more securely, and improved parts have been in use in our production since July 20. Units which have developed noise should be replaced.

FORM 6627

HUDSON-ESSEX
SERVICE BULLETIN

September 29, 1932

RE: REMOVAL AND APPLICATION OP TIRES

Improper mounting of tires and tubes on the drop center type of wire wheel is often responsible for short tire life as well as unsteady operation, especially at the higher speeds. To insure satisfactory results, the following instructions and suggestions should be observed when changing tires:

REMOVING TIRES: Removal and replacement of tires is best accomplished with wheel in position on car. Deflate tire, removing valve core and nut from stem. Turn wheel so valve stem will be at top.

Push valve stem upward as far as it will go, press casing together at top and push downward, working both ways from valve until beads of the upper half of the casing rest in the rim well. Pull bottom of tire over wheel rim flange and remove.

MOUNTING TIRES: First make sure that rim strip covering spoke heads is properly placed and in good condition. Inflate tube until it is just rounded out and insert in casing so that the valve stem will be exactly opposite the red dot on the outside of the casing.

Place casing and tube on wheel with valve through valve stem hole and force beads together and downward into well, working both ways from the valve stem.

Next, force lower part of casing over wheel flange and raise tire up at bottom in order to bring beads out of well at top and to permit the casing to seat properly on the rim. (This is important, otherwise the tube may be pinched and ruined.)

Apply valve stem nut and inflate tube just enough to round out casing. CAREFULLY EXAMINE CASING TO MAKE SURE IT IS CENTRALIZED ON WHEEL AND THAT THE SPACE BETWEEN THE RAISED LINE ON THE CASING AND WHEEL RIM IS UNIFORM ALL THE WAY AROUND. (Failure to do this may result in the tire being mounted eccentrically, causing a bumpy ride and front end instability.) Inflate tire to 28 lbs. for average driving and 36 lbs. for high speeds.

D.S.2081

FORM 6627

HUDSON-ESSEX
SERVICE BULLETIN

October 31, 1932

RE: -- TERRAPLANE CARBURETOR HEAT CONTROL

With the approach of the winter season it is imperative that the heat control valve on the Essex Terraplane be set in the "WINTER" position in order to obtain quick warm-up, maximum fuel economy, power and top speed.

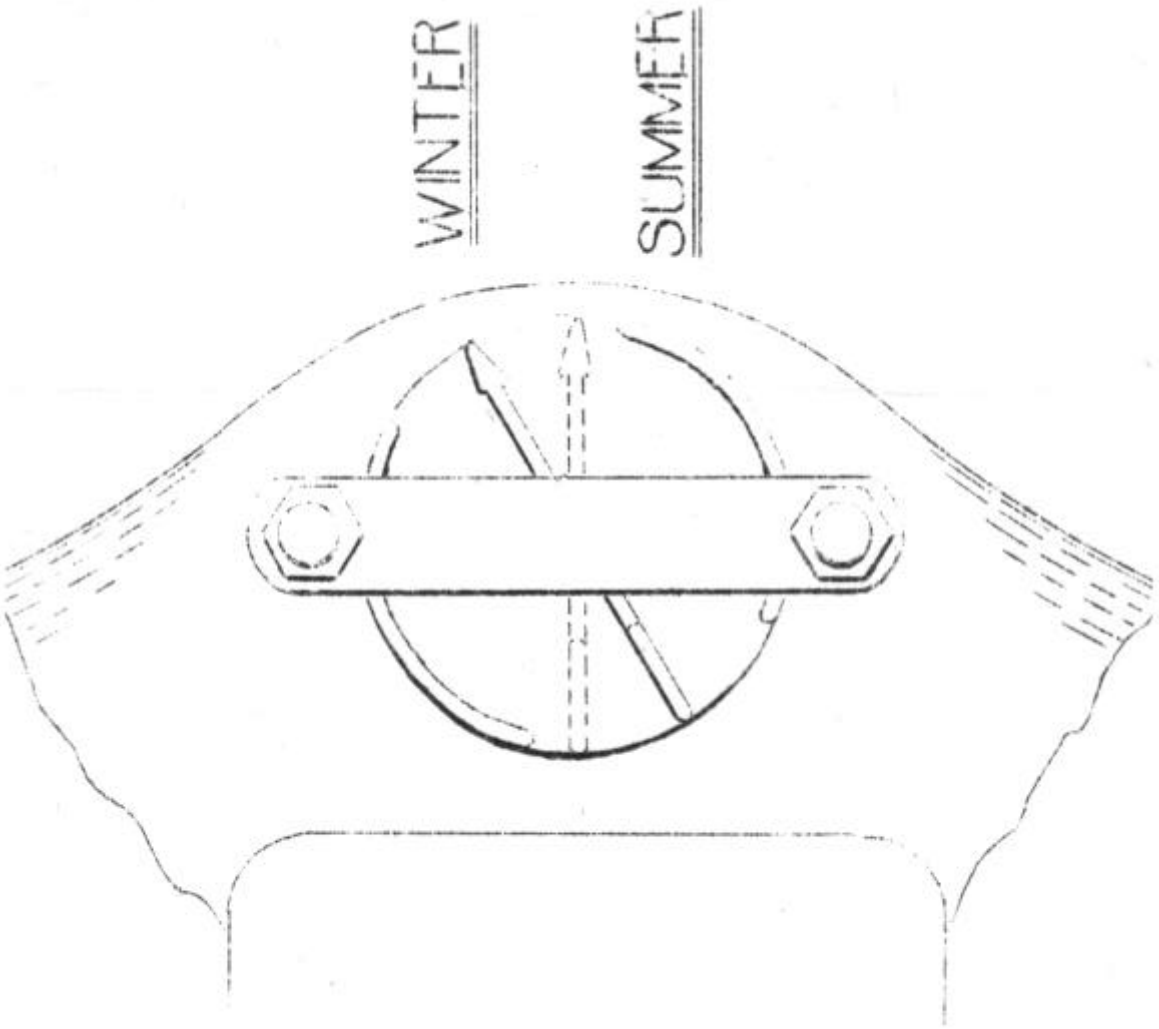
It is advisable for you to call all your owners in to have this operation performed. Since it is a very simple operation, requiring only the loosening of two nuts, the turning of the valve and the tightening of the nuts, you can easily offer this service gratis and take advantage of the opportunity to prepare the cars for winter driving while they are in your service station. By using this gratis service as an approach, you can undoubtedly, by proper selling, increase your business on anti-freeze, winter lubricant, engine tune-up, et cetera.

We also recommend that you make a record of all cars which are brought to you to have the heat control valve set in the "WINTER" position so that you can in the spring again call these cars in to have them reset for summer driving at which time you will also have an opportunity to go over the cars and prepare them for the summer season.

It is now time to take care of this operation which will insure satisfactory performance in addition to giving you an opportunity to obtain the profitable winter servicing items.

D.S.2082

ESSEX TERRAPLANE
HEAT CONTROL



The heat control valve in the exhaust manifold should be set in the "WINTER" position as shown in the sketch for all driving conditions except torrid weather.

If the engine seems to lag in warm weather when the throttle is depressed rapidly, it is an indication of excess heating of the intake manifold and the heat control valve should be reset. This is accomplished by loosening the two nuts shown in the sketch and turning the valve clockwise. The nuts should then be tightened securely.

The position of the valve indicated by dotted lines is proper for the highest temperatures encountered in most localities. Only in case of temperatures exceeding 100° F. is it advisable to turn the valve to the "SUMMER" position.

Encl.with
D.S.2082

FORM 6627

HUDSON-ESSEX
SERVICE BULLETIN

December 5, 1932

RE: -- SELECTION OP ANTI-FREEZE SOLUTIONS FOR ENGINES EQUIPPED WITH ALUMINUM CYLINDER HEADS

The use of any solution which contains alkali or salts in the cooling systems of engines equipped with aluminum cylinder heads will cause a corrosive action and eventually require replacement of the aluminum parts.

The use of Alcohol, Radiator Glycerine or Ethylene Glycol base anti-freeze solutions will give satisfactory protection against freezing without any corrosive action, as samples of these obtained from reputable sources have been found free of corrosive agents.

D.S.2083

FORM 6627

HUDSON-ESSEX
SERVICE BULLETIN

December 12, 1932

Re: - ESSEX TERRAPLANE -- COLD WEATHER STARTING

If the engine is cold pull the choke knob out as far as possible, turn the ignition switch key to the right, DEPRESS THE ACCELERATOR PEDAL AT LEAST HALF WAY and pull the starter knob out. When the engine "fires" push the choke knob in immediately at least 1/4" or more if necessary to keep the engine running smoothly. Release the accelerator pedal when the engine starts to prevent the engine from racing.

If the throttle is not opened sufficiently, the engine will fire but will probably die before the choke can be adjusted for smooth running. The exact amount of throttle opening is not important except to assure sufficient mixture reaching the cylinders for starting.

If the engine will not start readily by following the above instructions, perform the complete tune-up operation as covered in the Carter Carburetor Service Bulletin 243-S or in the Terraplane Instruction Book. In addition, check the choke valve to be sure it is closing completely when the control knob is pulled out and that the hinged half of the choke valve is locked in position so that it cannot be opened by engine suction.

D.S.2084