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## CAR HEALTH ANALYSIS

1. Provide a space on the service sales floor, if possible, next to the lubrication rack for making inspections. This space should be where other customers can see it and it should be identified with appropriate sign as shown in folder on Window Sign Suggestions.

2. Have inspections made by a well-qualified man—a trained man—one who can put real showmanship into making this Car Health Inspection a valuable part of the program.

3. As far as possible, handle inspections only by appointment. Make them valuable in the eyes of the owner.

4. Never make an inspection without first studying the owner's repair order file. Otherwise, you may list in the Urgent group, work that the owner had done in your shop a short time ago and it immediately weakens the effect of the inspection, or may result in some corrective work being called for. It's very important to check the owner's file first.

5. Never make an inspection without a road test.

6. Don't rush the inspection—take from three-quarters to one hour. The average dealer should make about three a day and per man in any shop two in the morning and three in the afternoon will be a good day's work. Don't figure on more than one an hour.

7. Never oversell and be sure your recommendations are placed in the correct group.

8. Inspect and sell on the basis of preserving car life, economy of operation and safety. Take advantage of today's conditions. Stress shortage of trained mechanics and material as reason for prompt action.

9. Sell necessity of Urgent group before pricing items.

10. Whether the owner buys the Urgent work right now or not, do the usual courtesy items such as clean windshield, check tires and battery.

11. After every big repair job, call owner within three days and ask how he likes it.

### HOW TO HANDLE THE INSPECTION

1. **IGNITION COIL:** With the motor running pull out the high tension wire at the end of the coil and see if you have a good long arc; or it can be done by merely pulling off a spark plug wire and checking the amount and color of the arc.

2. **SPARK PLUG AND WIRES:** Take hold of the wires, bending them to see if they are brittle and the insulation cracked. See that terminals fit tightly on the spark plugs. To check the spark plugs first wipe the porcelains off with a rag, then put the motor in gear and "pull" it against the brake until it almost stalls. If it does not miss on this heavy pull, you know that the spark plugs are in fairly good shape. Check the mileage that the spark plugs have been in use.

3. **DISTRIBUTOR POINTS AND CONDENSER:** Remove distributor cap, wipe dirt from cap contacts. "Break" the points with your fingers to see that they are not burned. Check condenser wire to see that it is tight and, of course, if the points are burned it might indicate a perforated condenser.

4. **CARBURETOR AND FUEL PUMP:** Check throttle operating rods and levers for being free. Speed up the motor two or three times to see that it does not starve at high speed. Also check by hand the heat control valve to make sure that it is not sticky. In this operation you may wish to disconnect the fuel line at the carburetor, turn the motor over with the starter to see that the

pump delivers a given stream of gasoline. Check mileage to see if fuel pump was ever reconditioned.

5. **COMPRESSION:** With the switch off turn motor over with starter, noting that the sound when the pistons come up on the compression stroke should be even. If so you know that the compression is even.

6. **OIL PRESSURE:** Check pressure at gauge both with motor idling slowly and warm and see that the pressure comes up to the proper poundage when the motor is speeded up.

7. **GENERATOR AND STARTING MOTOR:** Turn the motor over with the starter and note whether it turns as fast as it should to check starter motor. To check generator, run engine, watching ammeter, seeing that the generator does not cease to charge at too low a speed and that it builds up when the motor is speeded up. This also gives you a fair check on the voltage.

8. **BATTERY:** See that connections are not badly corroded and are tight. It is not necessary to make a hydrometer check unless you wish. However, remove caps and see that water is up to level.

9. **FAN BELT:** Check for slippage by turning fan by hand. Also feel slack in belt and look for frayed edges.

10. **LIGHTS:** See that all lights burn, jarring each one to see that it does not flicker. Have somebody depress the brake pedal to check stop lights.

11. **HORN:** Blow horn two or three times, taking note of amount of pressure used to make button contact and make sure that both horns are blowing, which can be determined by their tone.

12. **WINDSHIELD WIPERS:** Turn on wipers, if two speeds check both, and if they operate on a dry glass you know that they will operate on a wet glass. Examine rubber on blades and see that spring tension is tight enough to make the proper contact with the glass.

13. **WHEEL BEARINGS:** Shake or spin wheels, when on jack or hoist, to see that there is no looseness and that front wheels turn freely.

14. **STEERING:** Take hold of steering wheel and feel for lost motion. Set front wheels straight ahead and sight along tires, which gives you a fairly accurate check on toe-in. If front is jacked up it is a good idea to swing steering the extreme distance both ways to see that there is no catching or binding.

15. **SHOCK ABSORBERS AND SPRINGS:** Rock car front and rear by standing on the bumpers to check for spring squeaks or shock absorber noise. Press down slowly on each end of each bumper and this will determine whether one

shock absorber has more resistance than the others.

16. **DRIVE SHAFT AND UNIVERSAL JOINTS:** Check drive shaft for looseness by hand, both up and down and rotating.

17. **MUFFLER:** Check for leakage with engine running and make visual check for rust or looseness.

18. **BRAKES:** Check pedal to see that the throw is not too short or too long. Then try brakes back and forth on the floor.

19. **CLUTCH:** Check pedal-toeboard clearance, making sure that there is not too much clearance and that the spring pressure is not too light. Too much lost motion between floor board and pedal makes transmission hard to shift. Insufficient spring pressure, of course, may cause a slipping clutch.

20. **TRANSMISSION:** Listen to transmission with motor idling and clutch engaged, shift lever in neutral, and check sound of constant mesh gears. Try the shift on the floor. Recheck in final road test.

21. **TIRES:** Thorough visual check can be made very rapidly, preferably with wheels jacked up. The amount of wear or scuffing will quickly indicate whether the tires should be rotated or toe-in reset. Check pressure.

22. **DOOR AND WINDOWS:** Open and close all doors, checking lineup of dovetails and general fit of doors. Operate all windows, check for sticking. Also examine all liners for being worn and frayed. Shake glass with window partly down to check for looseness.

23. **UPHOLSTERY:** Examine for tears, worn spots, stains, dirt, etc.

24. Make visual check for dents, paint nicks due to flying stones, etc. Be sure to make impressive check of paint underneath one or more fenders, indicating to the owner that it is very essential at this time to keep the under-surfaces of the fenders well painted to guard against rust.

## MINNEAPOLIS, MINN.



## CARE OF CHROME PLATING

The life of a plated surface depends on the exposure it encounters and the treatment it receives.

Rusting is aggravated by moisture and particularly by salt water. Chrome plating, along the sea coast, depreciates more rapidly than in the interior. Salt used on the roads to melt snow and ice is the worst of all.

Due to the shortage of certain strategic metals, a strict control has been set up over plating processes, and the amount of material which can be used is definitely limited. Naturally the quality of the result is affected by the thickness of the plate.

The problem will become more difficult as the shortage of materials becomes more severe. You may already have found that local companies handling your plating are finding it difficult or impossible to obtain the materials they require. This situation will become more acute.

How does this affect you and your customers?

It means that your customers must take care of their present chrome, because they may not be able to get any more. It also means that traces of rust can not be considered as a reason for replacing chrome-plated parts, because the supply of such parts must be conserved for necessary replacements.

The simplest and easiest way to protect chrome plating is to wash it thoroughly with kerosene until the surface is clean and the rust has been removed, and then rub in a coating of Packard Body Polish. The polish fills the small holes which penetrate the plated surface.

The frequency with which the treatment must be repeated depends upon the degree of exposure. On the average, once a month will keep the plating in good shape.

## WINDSHIELD WIPERS

Few things are more annoying to a driver than a windshield wiper which does not properly clean the glass.

In many cases this is caused simply by the fact that the blades are not clean. Some of the fluids which are used by filling stations in cleaning windshields leave a thin film on the glass and the rubber and the blades will not wipe properly through this film. They must be wiped clean of any foreign matter.

The greater the pressure which the blade exerts against the glass the better it will wipe, but the pressure must not be so great that the wiper will

stall when it is operating on slow speed with a dry glass.

If the blade pressure is too light it can be increased by strengthening the spring. This is most easily done by shortening the spring by one coil. Bending the arm has little effect on the blade pressure. It can only increase the pressure by the amount which the new position of the arm increases the tension of the spring. Shortening the spring is more effective.

The greater the wiped area of the windshield, the more accurately the blades must operate in order to wipe clean. For this reason it is particularly important, in the case of the Clipper models, that the blades be properly set and in good condition.

## FRONT UNIVERSAL JOINT LUBRICATION

The front universal joint of the 1900 and 2000 models is a ball-and-trunnion type. It is identified by the fact that no slip joint is used.

It is recommended by the manufacturers that this joint be lubricated at 20,000-mile intervals and that it be packed with heavy fiber grease.

This does not apply to any rear universal joints or any front universals employing a slip joint.



THIS ISSUE MARKS THE 15TH BIRTHDAY  
OF THE SERVICE LETTER

## MOISTURE ON INSIDE OF BODY GLASS

Under certain conditions the "frosting" or "steaming" of the windshield and windows presents a problem to the owner and a general understanding of the situation will be helpful.

If the humidity inside the car is high, and the humid air comes in contact with the cool glass, moisture will deposit on the glass. If the glass temperature is above freezing point "steam" will result, and if it is below freezing, the glass will "frost".

The problem has become more serious in recent years because bodies are more tightly sealed. This causes the air to remain inside the body with the result that the humidity increases. The more airtight the body, the more serious the problem.

If steam collects on the glass while the car is being driven, the ventilating windows should be opened slightly and the defroster turned on. The greater the circulation of air across the face of the glass the more quickly it will dry off the moisture. Cracking the ventilating windows not only sets up air circulation but also withdraws the more humid air from the inside of the body.

Naturally it is better to prevent the moisture from forming than to attempt to remove it after it has formed. Just as soon as the motor is started the heater and defroster may be turned on. If air is in circulation moisture is not as apt to deposit.

The fresh air intake—in cars which are so equipped—helps the condition because it reduces the humidity of the air in the body.

## MOTH SPRAY AND MOTH CRYSTALS

The storing of new cars calls for care to upholstery. Protecting these cars against moths is one of the important items that should be done as soon as cars are put in storage.

Packard Approved Moth Spray and Moth Crystals are now available. They are stainless and will not attack the chrome plated hardware.

This material is easy to use. Follow the instructions furnished to spray the interior of the car and then leave a sack of the moth crystals hanging on the sun visor for prolonged protection.

This new Packard Approved Moth Spray and the Moth Crystals are available in kits or as separate items. The kit contains one gallon of spray, one spray gun and eight sacks of moth crystals. This is enough material to treat eight cars. Additional material may be purchased as separate items, the spray in gallons and the crystals in sacks.

Order a supply today for yourself and for your dealers' use. The following chart shows the PA numbers and prices.

	Suggested Dealer Cost
PA 13235 Moth Spray and Crystal Kit (enough for eight cars)	\$7.60
PA 13240 Moth Spray, 1 Gallon	2.85
PA 13245 Moth Crystals, 1 Sack	.50
PA 13250 Spray Gun, 1 Pint Size	.45

## LICENSE DATA AND CAPACITY INFORMATION

Series	No. of Cyls.	Bore In.	H.P.	Piston Displacement Cu. In.	Stroke In.	Crankcase Capacity Qts.	Trans. Capacity Pts.	Rear Axle Capacity Pts.	W.B. In.	Cooling System Qts.	Gasoline Capacity Gals.
1800	6	3½	29.4	245	4¼	5	2	4½	122	17	17
1801-1A	8	3¼	33.8	282	4¼	6	2	6	127	18	21
1803-3A-4-5-6-7-8	8	3½	39.2	356	4⅝	7½	2	6	127-38-48	20	21
1900	6	3½	29.4	245	4¼	5	2	5	122	15	17
1901-1A	8	3¼	33.8	282	4¼	6	2	6¾	127	17	20
1903-3A-4-5-6-7-8	8	3½	39.2	356	4⅝	7	2	6¾	127-38-48	20	20
1951	8	3¼	33.8	282	4¼	6	2	6¾	127	17	17
2000	6	3½	29.4	245	4¼	5	2	5	120	14	17
2020	6	3½	29.4	245	4¼	5	2	5	122	15	17
2001	8	3¼	33.8	282	4¼	5½	2	5	120	17	17
2021	8	3¼	33.8	282	4¼	5½	2	6¾	127	17	20
2003-4-5-6-7-8-23	8	3½	39.2	356	4⅝	7	2	6¾	127-38-48	20	20