Shirt buttons and Horseshoe nails

When we get so close to the woods that we can’t see the trees, it’s time to get out of our own little woodlot long enough to see ourselves as others see us. Now, right off hand shirt buttons and horseshoe nails don’t seem to have much bearing on customer service and car safety. And they don’t—directly! This is just a trick to get you Master Technicians to fully appreciate your potential importance to both your service customers and the safety of their cars.

Did you ever shower and shave only to find that your last clean shirt had a button missing? You’d like to wring the neck of your favorite laundryman. At a time like that you might have trouble noticing what a swell job he had done of washing and ironing that shirt. A missing button on a $5.00 shirt isn’t in the same class with a loose ignition wire on a $2,500 automobile. And professionally, the laundryman isn’t in the same class with you Master Technicians. However, from the customer-service point of view, you’re both in the same boat if you slip up on a seemingly unimportant detail!

Horseshoe nails come closer to the subject of safety than shirt buttons. Remember the old parable about the missing horseshoe nail? In case you’ve forgotten, it goes back to the days when wars were fought with horse cavalry. An eager horseborne warrior forgot to safety-check his horse’s shoes before the battle. Of course the inevitable happened. The spirited charger threw a shoe at a most crucial point in the key battle of the war and all was lost.

We won’t try to quote from memory, but the finale goes something like this . . . for the want of a nail the shoe was lost and for the want of a shoe the horse was lost, for the want of a horse the battle was lost. All was lost for the want of a horseshoe nail.

The transportation revolution from Dobbin to Dart, from Christobel to Chrysler or from Pinto to Plymouth has increased the importance of the horseshoe-nail lesson. Cars are not only bigger, heavier and faster but they have a lot more moving parts than horses. Besides, all good horsemen safety-checked their own steeds before, during and after every trip. Few modern knights of the road have ever looked under the hood of their steel steeds. If they did, they wouldn’t know what to look for. That’s why you Master Technicians have become the keepers of thy customer’s car safety.

When it comes to highway safety, it’s impossible to overemphasize the importance of the role played by you Master Technicians.

TABLE OF CONTENTS:

SAFETY SENSE AND SERVICE DOLLARS 1
COUNTDOWN FOR SAFETY 4
INSIDE THE CAR 5
OUTSIDE THE CAR 7
UNDER THE HOOD 9
UNDER THE CAR 10
SAFETY SENSE AND SERVICE DOLLARS

VISIBILITY AND LIGHTS

Highway safety statistics prove the importance of good visibility and proper operation of all vehicle lights. Safety experts agree that the highway accident toll would be substantially reduced if the lights of every vehicle were properly adjusted and in good working order. They also agree that visibility, particularly through the windshield, is a safety essential. The number of "one-eyed" cars on the road prove that many an owner doesn't bother to check his lights very often.

The next time you drive in a rain or snowstorm, notice the number of drivers that are squinting through streaked windshield glass! A burned-out headlight, taillight, stop light, turn signal or streaked windshield marks a vehicle that's headed toward the accident zone.

CORRECTIVE VS. PREVENTIVE SAFETY

When a customer buys a car from your dealership you can't go along to make sure he checks his lights every time he drives. Reminding him of the importance of lights and visibility won't solve the problem either. A legal spanking by a national, state or local law enforcement officer will make a much more lasting impression! However, this is a corrective rather than a purely preventive solution to the problem. There are a number of things Master Technicians and their service departments can do that are strictly preventive.

SAFETY—AN EVERYDAY JOB

An increasing number of dealers are recognizing that car safety represents an opportunity to build customer goodwill and service income. While each of these successful dealerships have a slightly different approach to the opportunity, they all have one feature in common. THEY WORK THEIR SAFETY PLANS TWELVE MONTHS A YEAR . . . INCLUDING THE NATIONAL VEHICLE SAFETY MONTH OF MAY.

A safety check program may start with the boss but its success will depend on every member of the service department crew. We are going to talk to the service manager for a few minutes but every Master Technician should be interested in eavesdropping. What goes on at the service write-up desk has an important bearing on your job and pay check. And in many smaller dealerships, you Master Technicians may double in brass as customer greeters, particularly during rush-hour periods.

What kind of a program works and increases the job security of the Master Technician? Because of differences in dealership size and location, some local tailoring is required to get a workable fit. The best that can be done on a nationwide scale is to give you a couple of composite samples of plans that have worked for others.
START WITH A CUSTOMER COURTESY CHECK

Many service managers have recognized that a stem-to-stern safety check would be a customer goodwill builder. Trouble is, a complete check takes time and service time is money. Besides, most of the cars that come into a new-car dealership for service are not old, high-mileage jalopies. How can you best serve your many customers who drive relatively late-model cars? For a starter, consider lights and visibility.

AVOID ONE-EYED CUSTOMER CARS

How do you avoid turning out a clean shirt without a button . . . delivering a service job with one headlight? One way is to check the lights, wipers and windshield washers on every car that drives into your service department. What better way to make a good impression on your customers? What better way to save time than by getting the customer into the act . . . letting him help you? With the customer’s help you can check every item on the sample card illustrated below in approximately one minute.

THE TIMING IS IMPORTANT

The best time to discover the need for a new light or new wiper blades is before the customer leaves your service department. By making a thorough check of these important safety items in his presence you will do much to impress him with your genuine interest in the safety of his car. If something is wrong, you probably won’t have to ask him for the order . . . he’ll ask you to add it on the repair order.

COURTING CUSTOMERS LEADS TO MARRIAGE

It might be a good idea to leave the card with him and suggest he use it as a reminder to check these items himself between visits to your service department. The more often your customer thinks about you and your good service department, the easier it’ll be to keep him.

Remember, the corner gas station meets your customer more often than you do. Make the most of every opportunity you have to woo him.

SAVE ROAD-TEST TIME

A complete road test is a good way to check on vehicle safety. However, a good road test takes time. During morning rush hours it usually isn’t practical to ride the car with the customer unless he has a specific complaint.

You are a Valuable Customer!

FOR SAFETY’S SAKE, ALLOW US TO COURTESY-CHECK THE SAFETY ITEMS LISTED BELOW WHILE YOU OPERATE THE CONTROLS.

<table>
<thead>
<tr>
<th>FRONT</th>
<th>REAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Windshield Washers</td>
<td>7. Tail and License Lights—Park Position</td>
</tr>
<tr>
<td>2. Windshield Wipers</td>
<td>8. Tail and License Lights—Low-Beam Position</td>
</tr>
<tr>
<td>5. Headlights—High Beam</td>
<td>11. Turn Signals—Left and Right</td>
</tr>
<tr>
<td>6. Turn Signals—Left and Right</td>
<td>12. Stop Lights</td>
</tr>
</tbody>
</table>

HOMETOWN MOTORS, INC.
ANYWHERE, U.S.A.
on handling, performance or braking. Yet for the sake of customer safety and satisfaction, you don’t want to miss anything that should be taken care of.

**ASK QUESTIONS ABOUT PERFORMANCE**

A practical time-saving solution to the road-testing problem is to ask the customer a few well chosen questions. An owner’s description and analysis of mechanical problems sometimes sounds a bit weird to an experienced technician. An owner’s report of troubles real or imaginary may not amount to much of a diagnosis but inviting him to report anything unusual may provide you with a valuable clue to something needing attention. Besides, inquiring about performance items which have a bearing on safety demonstrates your interest in him and the condition of his car. Asking questions will help you decide which cars should be road-tested. Some of the points to cover with customers follow.

**Headlight Aiming:** Your courtesy check will show whether or not headlights are burned out, but you can’t tell much about aiming unless you test them. Many safety experts agree that headlight aiming should be checked every six months. Ask your customer how long it has been since he has had his headlight aiming checked. Ask him if oncoming cars have flashed their lights when his are already on low beam. Do his lights reach far enough down the road for safe illumination? You may do him a safety favor and sell a headlight aiming job to boot.

**Service Brake Performance:** No one wants to invite customer complaints, but if a customer’s brakes pull, grab or fade excessively, they should be looked at. A carefully worded question or two about brake performance is certainly in the best interest of safety. If you have an opportunity, you may want to test pedal travel in the customer’s presence. If the pedal is dangerously low, don’t miss the opportunity to call it to his attention and sell him the needed service.

**Steering and Handling:** Needless to say, the way a car steers and handles is mighty important to safe driving. A car that drifts to one side, wanders on the straightaway, shimmys or has front-wheel tramp, needs some expert looking after. You probably won’t want to ask leading questions about specific symptoms but a casual question about steering and handling may jog his memory if he has noticed anything unusual. A question about steering may produce service ranging from tire inflation and balancing to front-end alignment.

**Over-all Performance:** Predictable acceleration and performance is essential to highway safety. Power to pass at high speeds and instant response to maneuver in traffic is important. If an owner has noticed anything unusual about the performance of his car he will probably tell you about it before you have a chance to ask. If he doesn’t and you suspect that he has driven a lot of miles since the engine has been tuned, a casual question about performance and response is another good way to demonstrate your interest in his car. Besides, selling needed services is good business.

**CONVERSATIONAL QUESTIONS**

Asking questions that may uncover unsatisfactory performance and bring in extra service work is an art. Reading off a list of services you would like to peddle isn’t a very good customer relations approach. For that matter, it isn’t a very effective way to sell extra services. Selling services based on the car’s actual needs is both good customer relations and good business. When writing up the service order, keep your ears open for customer comments that might provide a clue to items needing expert service attention. Experience is the best teacher, but here are a few examples of common service sales opportunities.

If the customer comments on rear-window fogging, find out whether he frequently has a full passenger load. If he does, he is a prospect for a rear-window defroster. If he is headed for a long trip with his family, the scene is set for a safety belt sale. If the inside of his windshield is smoke-filmed, he’s a setup for a wash job. Besides, selling a wash job is good psychology. When a customer pays a good-sized service bill, the pride of driving home in a sparkling-clean car takes a lot of sting out of the transaction. Selling service is an art that can be constantly improved upon. Listening to the customer and countering with conversational questions about his car provides a sound basis for mastering the art of service selling.
Few owners are qualified to safety-check their own cars. Even if they did look under the hood or have an opportunity to look at the underside of their cars they wouldn't recognize mechanical conditions needing expert service attention. The majority of customers come in for periodic service or because they have a specific complaint. Isn't it logical that most customers depend on the Master Technician to look beyond the repair . . . to spot unsafe conditions and report them before they cause serious trouble?

In big shops the owner may never meet the expert who works on his car. In small shops he may ask for his favorite Master Technician by name. Whether you work in a big or little shop, the customer knows the service manager or write-up man didn't do the work on his car. He brought his car into your service department because he knew that a qualified Master Technician would do the job right. Whether you are known or nameless, you are a mighty important man to your customers.

WHAT ABOUT FLAT RATE?

Even though you agree that it would be nice to service every car as though it were your own, a fine-toothed-comb inspection takes time. If you are on flat rate, time is money!

How much time should you spend looking for unsafe conditions and needed service? From the flat rate point of view, as little as possible. From the customer's point of view, enough to do a thorough job. From the service profit point of view, enough to spot extra service income. The most practical compromise is to inspect as much as you can in the shortest possible time. You'll be surprised at how much ground you can cover without hurting your flat rate performance by following an organized inspection plan. A COUNTDOWN FOR SAFETY inspection form has been included in the Service Manager's Meeting Guide. Your Service Manager will probably discuss this check sheet at your MTSC meet-

ing. If he doesn't you may want to ask him about it. It is organized by areas rather than mechanical systems, to help you get into the habit of checking a lot of items without wasting time.

INSIDE THE CAR

If you move a car you are working on, check the items that should be inspected inside the car. With a little practice, checking the ten points listed will become almost automatic.

OUTSIDE THE CAR

On many jobs the repair order won't require putting the car on a hoist or lifting the hood. On these jobs, get into the habit of checking the items listed for the car's exterior.

UNDER THE HOOD

On many modern cars the engine compartment is a crowded and busy place! It takes a Master Technician's trained eye to recognize potential trouble spots under the hood. With your training and experience you'll see more in one minute than an owner or gas station attendant would in ten.

UNDER THE CAR

The underside of a car is another area where your knowledge and experience is a priceless asset. In terms of safety, no one but another Master Technician is so well qualified to spot trouble before it happens.

KEY YOUR INSPECTION TO THE REPAIR ORDER

The repair order will tell you which items to inspect without losing time. If the repair order puts the car on the hoist, look underneath. If the repair order requires working on the engine, look under the hood. The remaining pages of this reference book are devoted to a more detailed discussion of what to look for plus corrective service tips. They are arranged in the same order as the COUNTDOWN FOR SAFETY check list in the meeting guide.
If you have a regular courtesy check program in the write-up area, some of the car interior inspections will be taken care of before the car is sent back to your service bay. If your dealership doesn’t have a courtesy inspection plan for the customer reception area, all the more reason why you, the Master Technician, should check the car interior for needed service. Whether you inspect all of the items listed will depend on the setup in your service department.

**SERVICE BRAKE PEDAL TRAVEL**

Check the service brakes by depressing the brake pedal. *Do not pump it.* If the pedal does not go down beyond one-half its normal travel, the brakes can be considered satisfactory. If the pedal travel is beyond the one-half way point, the brakes may require adjusting or relining.

*Cars with automatic adjusters:* If the brakes are provided with automatic adjusters, a low pedal would indicate that one or more of the adjusters is not working properly. Failure of the adjusters to adjust the shoes automatically could be due to the adjuster cable being too short, too long, or not installed properly in the cable guide. There is also the possibility that corrosion in the adjuster screw threads or on the thrust washer is preventing the star wheel from turning. The procedure recommended to locate the faulty adjuster and make the necessary repairs follows.

*Determining which adjuster isn’t working:* It is not necessary to remove all brake drums to locate the faulty adjuster. Place the car on the hoist with a helper in the driver’s seat to apply the brakes. Remove the adjusting screw hole cover from each brake shield to observe the star wheel. Back off the star wheel at one brake about 30 notches to allow room for automatic adjustment. Use a narrow tool to hold the adjuster lever away from the star wheel while turning it backward.

Spin the wheel and drum in reverse direction and have the helper apply the brakes vigorously. This will cause the wrap-up effect necessary to move the secondary shoe and the cable will pull the lever up. Upon releasing the brake, the lever should snap downward, turning the star wheel. If the adjuster does not function properly, the respective wheel and drum must be removed to service the adjuster.

*Servicing the automatic adjusters:* If the adjuster threads are frozen, disassemble the adjuster and clean the threads. Replace the thrust washer if it is badly corroded. Lubricate the adjuster threads with Siliglide Lubricant and reassemble the adjuster. When servicing
brake adjusters, be sure the cable is positioned in the guide. Make sure the cable eye is snug against the anchor pin and in the cable guide. If the lever cannot be positioned properly in the shoe, the cable length may not be correct. Part Number 2401513—Cable, for 10-inch brakes, should measure 9-51/64 to 9-27/32 inches. On models with 11-inch brakes, cable Part Number 2266270 should measure 11-7/64 to 11-9/64 inches.

PARKING BRAKE OPERATION
Test the effectiveness of the parking brake. If pedal resistance builds up rapidly, it is reasonable to assume the parking brake will hold properly. If not, the parking brakes should be adjusted at the shoes and cable equalizer.

PARKING LOCK OPERATION
The transmission parking lock used on some models can be easily tested by allowing the car to roll slowly and then moving the lock lever on the instrument panel to the “Park” position. The lock should engage fully. If it doesn’t, adjust the cable at the transmission end. If this does not correct the condition, it may be necessary to adjust the control housing end of the cable.

![Adjust cable here...and at control housing if necessary](image)

Fig. 3—Parking lock cable adjustment

MANUAL STEERING FREE PLAY
Any time you move a car into or out of your service bay, check for excessive steering gear free play. Lost motion at the steering wheel is a sure sign of an unsafe steering condition. Further inspection will be necessary to find out if the trouble is in the gear adjustment or in the steering linkage. The important thing is to spot the unsafe condition so that the owner can be told about it.

POWER STEERING OPERATION
The service department isn’t a very big test area but often an experienced technician can recognize power steering troubles right on the service floor. Excessive free play, lack of assist and power steering pump noises tell you that something is wrong. If the trouble sounds like low power steering fluid or a slipping drive belt, you may want to fix it first and then tell the customer about it. You can be sure he’ll appreciate your genuine interest in him and his car.

INSTRUMENT AND INTERIOR LIGHTS
Proper operation of the instrument panel and interior lights isn’t a critical safety item. However, interior lights that don’t work have considerable customer irritation value. If you notice any that aren’t working, make a note of it. Inoperative domelight switches are particularly annoying. It’s a good idea to check both the instrument panel switch and the automatic door switches.

HORN OPERATION
A horn that doesn’t blow or one that blows unexpectedly is a safety hazard. If a customer has either of these troubles he will probably have it put on the repair order. If you don’t have strict rules about noise in your shops, give the horn a beep before you back out of your service bay...just to make sure. Of course, a horn that blows without touching the horn ring should be reported.

WINDSHIELD WIPER OPERATION
If your shop doesn’t have a plan for checking windshield wiper and washer operation, be sure and check them yourself. Both wipers and washers are important to visibility and safe driving. Besides, replacement blades and windshield washer fluid are good service parts profit items. Washer nozzle and wiper arm blade adjustment are potential service labor income. There’s more about wiper arm adjustment under the heading, “OUTSIDE THE CAR”.
CONDITION OF GLASS

Cracked, broken or otherwise damaged glass is a serious safety hazard. If the write-up man is on his toes, not many of these will go unnoticed in the customer reception area. If in the early morning rush hour a damaged glass gets by the man up front, be sure it doesn’t get past you. Glass is important to safety. In the case of late-model cars, the insurance company, not the customer, will be footing the bill. A few extra glass replacement jobs will add quite a few dollars to service department income.

REAR-VIEW MIRROR

Most customers will appreciate it if you keep your hands off their rear-view mirrors. It’s second nature to readjust a rear-view mirror to your own liking as soon as you get into a car. Just in case you are tempted, don’t do it. The owner won’t appreciate the new position if he doesn’t realize the position has been changed until he gets into heavy traffic and can’t see the cars behind him. Of course if you notice a mirror hanging limply on its bracket, tighten up the adjustment at the ball swivel so that it will hold its adjustment. You’d be surprised how much an owner will appreciate a little touch like that.

OUTSIDE THE CAR

On some jobs you won’t get inside the car, under the car or under the hood. Even so, once around the outside can uncover clues to unsafe conditions and extra service dollars. Here are six items that can be checked in much less time than it takes to tell.

WINDSHIELD WIPER BLADES AND ARMS

Worn or deteriorated wiper blades will leave a streaky pattern that will obscure the driver’s vision. Many drivers fail to notice the reduction in vision because the blades deteriorate so gradually. Keep an eye open for worn blades and improperly adjusted wiper arms. If both blades don’t park in the same position, the wiper blade arms are out of adjustment.

When replacing blade inserts: The parking position of the blades should be noted. Parking position must be correct to assure correct travel of the blades. On single-speed wipers, be sure the arms are positioned on the pivots so the blades park one inch above the moulding. If the blades do not park properly, reset them by loosening the arm attaching nuts and operating the wipers several times. Then, turn the wipers off and adjust the blades one inch above the moulding and tighten the nuts.

On variable-speed wipers: The blades should park against the moulding. If adjustment is required, adjust the motor switch plate so the blades park as low as possible. Then, loosen the nuts at the pivots. Position the blades at the moulding and tighten the nuts.
OUTSIDE MIRRORS

It's more difficult for the owner to adjust an outside mirror than it is to adjust an inside mirror. The warning about not changing the adjustment of inside mirrors goes double for outside mirrors. Try not to move them accidentally or otherwise. Several shops hang a small sign on rear-view mirrors suggesting that customers check the adjustment before they get out into traffic. If you run into a mirror that won't hold an adjustment because the pivot is loose, tighten the pivot adjustment.

DOOR LATCH OPERATION

If your hands aren't greased up to the elbows, take time to open and close each door. Correct latch operation and striker adjustment is good insurance against accidental opening of doors. Besides, proper latching will minimize dust and water leaks as well as eliminating door rattles. Most owners won't object to spending a few dollars to eliminate leaks and rattles. If the shop isn't too rushed, try the door locks. Winter weather and extreme dust conditions are apt to bind up the lock cylinders so the key won't work easily. If you can take time to check the trunk lock, too, so much the better. Opening the trunk will give you a chance to check spare tire inflation and jack stowage. These items are more a matter of customer courtesy than safety. The customer will appreciate the good intentions of a technician who spots a flat or underinflated spare or stows a jack properly to eliminate a rattle.

TIRE PRESSURES

In some shops, every technician carries a tire pressure gauge and checks inflation on every service job. This is a customer service worth considering for your service department. Of course, correct tire pressures are important to both tire life and safety. Even if your shop doesn't provide a tire gauge for every technician, your trained eyes can recognize a dangerously underinflated tire. If the low tire is a leaker, it may go flat before the customer picks up his car in the evening. A low or flat tire is particularly annoying to a customer who has just paid his service bill and is hurrying home for supper.

FRONT TIRE WEAR

The easiest place to inspect tires is on the hoist. Complete tire wear pattern analysis is covered in the next section. However, you can easily spot unusual front tire wear conditions while the car is on the floor. Keep this in mind. You may catch an unsafe front alignment condition that should be taken care of.

FLUID LEAKS ON THE FLOOR

Oil, water or other fluid leaks are an obvious tip-off to potential trouble. If there are fresh fluid spots on the floor of your bay when you move a car out, check into the condition a little farther. If the wet spot is brake fluid or gasoline, the trouble may be serious from the standpoint of safety. And, of course, a coolant leak means potential trouble, too.
Your knowledge of Chrysler-built cars is particularly valuable when it comes to recognizing out-of-line conditions in the engine compartment. On late-model, low-mileage cars you can take in most of the items listed at a glance. On higher-mileage and older cars you'll have to look a bit closer to see trouble through the normal accumulation of road grime. These higher-mileage cars are worth inspecting because they are more apt to need extra service work.

**MASTER BRAKE CYLINDER FLUID LEVEL**

It's a good idea to check the fluid level in the brake master cylinder. If you don't, some eager beaver in a corner gas station will. If the independent happens to find the fluid level low shortly after you have serviced your customer's car, you can be sure that he will make the most of the situation at your expense. The same reasoning applies to checking other fluid levels. Check them in self-defense of your reputation for good service.

![Check master cylinder fluid level](image)

**WINDSHIELD WASHER RESERVOIR FLUID**

Windshield washers are a valuable safety device. In many driving situations they are an absolute essential to safe vision. Check the reservoir fluid level on every job. You may pick up the sale of approved MoPar or Chryco washer fluid.

**POWER STEERING PUMP RESERVOIR**

A slight loss of fluid is normal. If the power steering pump reservoir is unexplainably low, it's a good idea to try and find out where the fluid is leaking. For safety's sake, the condition should be corrected.

**RADIATOR COOLANT LEVEL**

Technically speaking, a low coolant level isn't a safety hazard. However, it can lead to serious engine trouble and even engine failure on the highway. A stalled car is a safety hazard. Take a few seconds to lift the radiator cap and check coolant level. If the level is low, you are better equipped than your independent competitors to pressure-test the cap and system for leaks.

**ROUTING AND CONDITION OF COOLANT HOSES**

On high-mileage cars it is doubly important to note the condition of coolant hoses... including the heater hoses. On all cars make sure the heater hoses are properly routed and secured in their clips so that they won't be accidentally damaged.

**BATTERY AND CABLES**

Loose or corroded battery cable terminals and low electrolyte level lead to owner inconvenience and starting troubles. Your less skilled competitor at the gas pump is usually trained to make quite a show of checking the battery. You have the edge in experience and training. You are qualified to tell the difference between a battery that is losing water because of a leak in the case and one that is boiling off water because of a high voltage regulator setting. You are well equipped to beat the corner gas station to the punch on battery and charging system service.

**DRIVE BELT CONDITION AND ADJUSTMENT**

No need to tell you how important drive belt condition and adjustment is. Don't miss an opportunity to adjust a loose belt or let the owner know about the need for a new belt.
ROUTING AND SECURITY OF WIRES
Clips are provided to keep wires in place so they won't be damaged or short accidentally. A loose or improperly routed wire is a sure sign of potential trouble... possibly a fire hazard. Keep an eye out for these conditions. On 1962 models, make sure the multi-connector is secure in its receptacle. A loose multi-connector can result in loss of lights or other electrical system troubles.

POWER BRAKE VACUUM LINES
The power brakes on Chrysler-built vehicles are designed to provide braking even if there is no power assist. However, unexpected loss of vacuum narrows down the margin of stopping safety. It's good practice to check vacuum lines and connections.

CARBURETOR AIR CLEANER
If your owner is on a Certified Car Care maintenance schedule, you are probably taking care of his air cleaner filter element service needs. However, some owners who drive around town most of the year may get into extreme dust conditions on vacations, hunting or fishing trips. He may not realize the need for air cleaner service at more frequent intervals. Catching a dirt laden filter element in time can save the customer unnecessary expense and engine trouble. Besides, the condition that plugged the air cleaner may indicate the need for more frequent engine oil and oil filter change. The new models won't be in as frequently for lubrication. All the more reason why you Master Technicians take every opportunity to take care of all the car's needs.

MANIFOLD HEAT CONTROL VALVE
You Master Technicians know better than anyone else how important it is to make sure the manifold heat valve isn't stuck. This is an item you are already inspecting on every under-hood job. Keep it up.

HOOD LATCH OPERATION AND LUBRICATION
When you open the hood, make sure the safety latch is working. Before you close the hood, check to make sure the latch mechanism is lubricated. When you close the hood, make sure it latches easily and securely. This is good insurance against accidental opening of the hood on the highway.

Fig. 7—Check hood latch operation

From the standpoint of safety, you Master Technicians can tell a great deal about the general condition of a car by getting it up on a hoist. You can do more than anyone else to insure the safety of the car and owner by keeping your eyes open for out-of-line conditions under the car. Here again, it takes more time to discuss the items to inspect than it does to make the inspection.
TIRE CONDITION AND WEAR PATTERNS

Checking the tires, particularly the front tire wear pattern, can tell the experienced technician a great deal about front-end alignment and the general condition of the steering linkage. Reading tread patterns is not new to most of you, but it is well worth reviewing because tires are so important to highway safety.

**Spotty Wear:** Sooner or later, the front tires will develop a spotty wear pattern if they are not rotated at recommended intervals. Tire rotation will not only prevent excessive spotty wear, it will correct the condition if it is caught before the spotting is too severe.

**Camber Wear:** Excessive wear at one side of the tread is a sign of improper camber adjustment. Excessive positive camber will wear the outside rib; negative camber will wear the inside rib. One or both front tires may be affected. Under very extreme crowned road conditions, the right tire may appear to have some camber wear even though camber is within specifications. However, this is a very unusual condition that must be treated as an isolated case.

**Toe-in Wear:** Excessive toe-in, or toe-out, scrubs the tire against the road surface and produces a featheredged wear pattern. That's because the leading edge of the tread pattern scrubs off rapidly and leaves a featheredge of rubber at the trailing edge of the tread pattern.

**Under-Inflation Wear:** If a tire is underinflated, the center portion of the tread is not
properly supported. The outside ribs carry most of the load and wear prematurely. Besides, underinflated tires overheat, are more apt to blow out and are therefore unsafe.

**Over-Inflation Wear:** If a tire is over-inflated, the center ribs carry most of the load and wear prematurely. Traction is reduced and the possibility of skidding is greater.

![High-speed on turns causes cornering wear](image)

**Cornering Wear:** If all four tires are worn excessively at both the inside and outside ribs, the owner has been taking corners too fast for comfort. You can’t save rubber on a hot-rodder’s car by deviating from alignment specifications, so don’t try. The best you can do in the interest of safety is make sure he has good brakes and a safe steering system!

**Tread Damage and Debris:** On a freewheeling lift it only takes a few minutes to inspect all four tires for breaks and foreign matter in the treads. Here is an excellent opportunity to catch an accident-producing condition before it happens.

**WHEEL BEARING ADJUSTMENT**

A loose wheel bearing is apt to fail long before its time. Excessive looseness can often be detected without removing the wheel and drum. The time it takes to check this possibility is well worthwhile.

**BRAKE LINING INSPECTION**

The Certified Car Care schedule calls for inspecting brake shoes and linings at 16,000 miles and 32,000 miles. Since most of the wear is at the front wheel shoes, inspect the brake and lining any time the work order calls for front drum removal. This is particularly important on cars which aren’t serviced regularly under the Certified Car Care Plan.

**BRAKE LINES AND CONNECTIONS**

Modern brake lines are tough and resistant to damage. Even so it is a good idea to give them a quick once-over for evidence of damage. Inspect connections for evidence of leakage. Brake line inspection is particularly important on cars that have been driven under rough, off-the-road conditions. Telltale scraping of the underbody or debris in the running gear provide good clues to cars that have been driven over rough terrain.

**FLUID LEAKAGE AT BRAKE SHIELDS**

Fluid leakage at a brake shield is a good clue to a leaking brake wheel cylinder. If this condition is caught early enough, you may save the customer a reline job. If it isn’t caught early, make sure your service department gets the brake job!

**FRONT SUSPENSION**

Inspect the ball joints and seals on every under-car job. Torn seals can result in loss of lubricant and will allow dirt and road splash to work into the joints, resulting in excessive wear and looseness. Just remember though, lower ball joints are assembled to have some axial or vertical free play when there is no load on the wheel. Up to fifty-thousandths of an inch is normal. Therefore, do not replace these ball joints unless the free play exceeds this amount.

![Use seal installer at lower ball joint](image)
Seal Installation: When replacing upper ball joint seals, be sure to use the correct seal installer. Installer C-3736 is required for all models except Chrysler and Imperial. On Chrysler and Imperial models, use Installer C-3867. Using the installer will prevent distortion of the metal lip on the seal which could lead to loss of lubricant.

LOWER CONTROL ARM STRUT
A loose lower control arm strut can cause undesirable handling and braking. Inspect the rubber bushing and the attachment at both ends of the strut. If the bushing is damaged, replace it. When tightening the nut at the front of the strut do not tighten it beyond specifications for the model you are working on. Correct bushing preload is determined by correct tightening of the nut.

STEERING LINKAGE
Inspect tie-rod-end seals and test the tie-rod ends and idler arm for evidence of looseness. Excessive free play anywhere in the steering linkage will result in undesirable steering handling characteristics.

Safety Warning: Do not bend or attempt to straighten steering or suspension parts. Play it safe by installing new parts.

PARKING BRAKE CABLES
On models equipped with rear wheel parking brakes, check the cables to be sure they are free in their housings. If the cables are sticking, or are seized in the housings, they should be freed up and lubricated. Although the ends of the cable housings are sealed, road splash and dirt on the cables may in time work into the housings and restrict the movement of the cables. On models having an independent parking brake, check both the cable and the brake assembly. A good parking brake is a safety feature.

UNIVERSAL JOINT BOOT
A damaged universal joint boot will result in lubricant getting out and dirt getting in. Universal joints rarely ever fail if the boots are in good condition. You can help your dealership avoid the unpleasant situation resulting from premature U-joint failure by checking the boot on every under-the-car job you do.

REAR SPRINGS
Rear spring condition has a direct bearing on front-end alignment and therefore affects steering and handling. Pay particular attention to the condition of the spring shackles and spring clips. If the U-bolts have loosened up enough to allow the spring to shift, the condition will be obvious at a glance and should be corrected before the car leaves your service department.

EXHAUST SYSTEM CONDITION
You have to get up early in the morning to keep ahead of the fast-change muffler shops. The best way to get your share of this business is to check the exhaust system on every car you work on. For safety's sake, don't confine your inspection to muffler checking. Check the tailpipe, exhaust pipe and all clamp bolts.

CONCLUSION . . .
Taking care of a car's actual service needs is the surest way to increase service income and profit. You Master Technicians are best qualified to spot needed services that aren't on the repair order. Keeping your eyes open for extra service work pays off in two ways. Performing needed services helps keep customers satisfied with the cars your dealership sells. Bringing in extra needed services is good pay-check insurance for you Master Technicians.