



**A WORRY-FREE
CAR CARE MANUAL FOR
EVERY DRIVER!**

How You Can Keep Your Cars Dependable, Safe and Efficient!

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THE ELECTRICAL SYSTEMS

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Chapter 1 - Why should you be concerned about your automobile's health?

A brand new car! WOW! Hearing such words can make anyone feel like heaven. Buying a car is, but not the only weighty thing, it is highly indispensable to take its regular care as well! Not only it will save great monetary value, but also helps in having safer, secure and totally 'worry-free' driving experience.

'A poorly maintained vehicle is a dump full of worries'! If a car owner takes timely care of his automobile's health, then it can help in overcoming majority of issue such as road accidents. Possibility of car owner being stranded on road side can be totally avoided only if regular car care is taken. Gas mileage obtainable from an automobile can be greatly increased if it is uniformly supervised. Smooth and non-chaotic engine can be attained easily if a vehicle is maintained properly. From gears to tires, keeping a check on all such components can provide with a car fit to cater all kinds of purposes.

Key to safe journey - proper maintenance of automobile! A car stopped in middle of road, during dark night time can make a really panicking situation. Why to face such state of affairs, if a possible solution for this is present. Just have regular car maintenance. Having timely car check up can help in avoiding all such major difficult circumstances that can arise due to any minor fault in car. From cables, tire iron, spare tires to jack and all such stuffs, it is better if all of them are checked at regular interval in order to avoid occurrence of any difficulties.

This is not it! If an automobile is new and is under warranty time line, then best thing is that vehicle can be maintained for absolutely free! Keeping a track record of required mile inspections which the manufacturer is asking for can help to keep the warranty time period from becoming void. Even such an activity is of real help during time of undertaking any insurance policy. Good maintained cars always have higher chances of procuring better insurance policy than one which is always neglected. So, don't neglect, take good care of vehicles!

It might be little expensive to go for car maintenance regimen. It is however not as much costly as it might be fixing it on road. There are some major car parts which require special attention and by considering only these can help in maintaining a vehicle to its best. Read on to know about them!

Chapter 2- Auto Upkeep Basics

Time line of converting 'a car' into 'junk car' can be reduced significantly if proper care of some of its major parts is carried on well.

Besides keeping a timely check on tire pressure, rotating the tires after every 5,000miles or 8,000km is a great way to make them working properly. Dust on brake is inclusive of plenty of nasty stuff which is not cleaned off properly can clogged up brakes. Regularly cleaning of brakes and all such parts can help in clogging up of dust in such areas. The front part of engine is further encircled with tons of wires and rubber drive belt that commands everything from a/c compressor to alternator. Getting regular check for such things after every 25,000 miles can avoid occurrence of any major fault.

To exploit economic level of fuel, it is essential that besides tire pressure, oil level as well as level of coolant is inspected. There should be no excuse for that at least! One thing to remember here is that sportier cars have greater compression engines which are supposed to generate more power and therefore are in need of 'extra efficient' fuel gas. If a car is especially labeled as 'regular' then it is wise to go for regular fuel gas only. Having that 'extra' can create high amount of pressure on engine. Along with checking battery terminals regularly, connecting and disconnecting battery at timely intervals helps in increasing its life.

Keeping body paint of car in shiny and glossy form always is true symbolism of its well being. Removing stains, scratches and other such stuffs from car's body makes it appear appealing and healthy. Not only this! Even the flash lights, bulbs of indicators and headlight bulbs must be made sure to be not blown off. Electrical fault light, coolant light, dash

light, brake warnings as well as oil warning are some of other important lights in a car which are required to be well maintained. These are special kinds of indicators which are present in almost every type of car and are required to be properly checked. They keep informing a driver about inside current status of a car and help in avoiding any major difficulties.

These are basic ways of up keeping automobiles. Some parts however, are in need of more elaborative attention as they are so called 'heart and soul' of car. What are these parts and how they can be maintained well can be known through next upcoming chapters!

Chapter 3 - How to Keep the Engine Intact?

Faithfully washing a car every weekend is most favorable doing of a passionate car driver. This is but only external maintenance! What about cleaning and maintaining the car under hood? Yes, it is the car engine which is being talked about.

Changing engine oil after every 3,000miles to 5,000miles run is the most basic step towards sustaining better health of an automobile. New cars supposedly allow more miles run between oil changes time line. Using synthetic oils can help in retaining engine's efficiency to greater extent as these oils have lower break down rate in comparison to other oils obtainable from marketplace. Entry of even minute dirt particles in engine creates an impact on its overall working. In order to get rid of such difficulty, it is better to change oil filter timely. Changing only engine oil and having gummed up oil filter is of no use at all! Best way is to change both oil filters as well as engine oil simultaneously for perfectly moving car!

Checking the level of oil is another imperative thing in keeping the engine in properly working manner. As soon as a car is brought in, its hood must be lifted up and positioning of oil dipstick must be checked. For checking it, the oil dipstick can be easily pulled out, wiped off and then put back in position. Against driving seat is an engine oil meter, which denotes the quantity of oil available. Always make sure that the oil amount does not exceed full level 'F' and is not below minimum level 'E'. Both, overflowing oil and its fewer amounts can hinder the performance of an engine, making it less effectual.

Dark colored stains on dipstick is symbol of improper functioning of engine and is most often carbon deposits. A properly maintained engine is supported

with clear yellow, golden color dipstick tone. To check possible leaks, the flashlight can be used to check the car from underneath. Besides cleaning the antifreeze, the level of coolant in engine must also be maintained at an adequate level. Presence of engine oil in area of coolant is an indication of arising problem in radiator. It may lead to problem of blowing of head gasket or leakage in fluid cooler. Along with inspecting the idle parts of engine, it is better to listen to engine's sound while driving. A too loud engine roar is not at all good!

Timely inspecting hoses and belts and other rubber parts is also essential for fine tuning of engine. To make a car functioning truly superbly, it is better if readers get familiar with electrical components of car too.

Chapter 4 - How do the electrical systems of an automobile work?

For a novice, a car's electrical system is not more than cluster of wires, but in reality these small wires are a minuscule portion of large system which distributes required electricity to cater car's need.

Automobile electrical system is both complex and sophisticated! It is inclusive of components such as battery, solenoid, starter, voltage regulator, generator or alternator and fuse panel. While battery is the 'central heart' of a car, other components are equally vital. A power of 12volt is formulated by battery in order to supply it to all electrical needs. This generated battery is then recharged by alternator or generator. A belt is used in order to make connection between engine and generator and is useful in generating the battery which is required for car's working. Finally, the voltage formulated through the battery passes to the starter from where it is accessible to start a vehicle.

Battery is considered as 'soul' of an electrical system of an automobile as it stores all power generated and which is required for making a car move. Auxiliary apparatus such as clocks, radio and car alarm are also run with help of battery only, especially at time when engine is in still mode. Six cells are incorporated in battery which is separated for negative and positive plates through insulators. They are even immersed in electrolyte substance usually mixture of sulfuric acid and water. Alternator on other hand is useful for generating electricity which helps in running of electrical devices such as engine controls and other ignition devices. A belt drives the alternator which is connected to engine and helps in converting AC power to DC power.

Starter formulates another vital car component and is biggest power consumer. The crankshaft of engine is turned on via flywheel in order to start process of combustion and finally for starting the car. Compression within cylinders is generated as soon as process of combustion starts. While battery is used to transfer this power, solenoid is used to administer it which is furthermore controlled by ignition switch. Turning this switch on finally starts the starter motor and then the car.

Final component of car's electrical system is fuse panel which is connected with each electrical device in an automobile. Position aside kick box, this box is inclusive of ample numbers of fuses. Such fuses protect occurrence of short circuit, overload and more greater damages as if even fire.

With a nutshell explanation of working of car's electrical system, readers will not only able to know how it works, but will be also benefitted when next time having a car repair work. What about the cooling and lubrication system? Let's check that as well!

Chapter 5 - Understanding Cooling and Lubrication

Like every other machine, a car also requires to be taken good care of. The maintenance of a car and all its parts is very essential. One does not want their car to crash on the road every now and then because of low maintenance and carelessness. Two of the highly significant systems in an automobile are cooling and lubrication systems. The cooling system is not one which provides cool breezes during hot summer days from car's a/c! It is the inbuilt system of a vehicle which prevents it from being getting overheated. This is something that is meant to regulate and control the heat generation of the engine of the car. There are many complex parts that it involves so that the car is benefitted in every way. The mechanism that goes into this sort of a machine is high tech and there is the need to understand it well.

Coolant, water pump, overflow reservoir, fan, thermostat and radiator are the components which form a 'full fledge' system of cooling. Belts, sensors and hoses are other minor parts which are being involved in the system. Constant burning of fuel and continuous occurring of friction increases the amount of heat in the inbuilt systems. The heat is produced due to the constant wear and tear is harmful for the car if care is not taken. No doubt there are counter mechanisms as well to nullify the ill effects of heating. While much of this heat amount is being dumped off through exhaust system, some amount is still being left inside. This is the reason there is the need of an extra cooling and lubrication system in the car. This excess heat is then removed from engine with help of automobile's cooling system.

The system of the cooling is supposed to work full time and without a stop. As long as the car is in

ignition, there is sure to be the wear and tear and the friction is sure to cause damage to the complex machinery. For this reason there is the need of a coolant that is in motion as long as the car is on the go. As long as the operational activity of engine continues, the cooling system is also in function. Depending upon internal mechanics, either liquid-cooled or air-cooled systems are incorporated in a car. These are the two different types of cooling variants that are sure to keep the car running in a smooth condition for many years. There is a constant need for man to understand the importance of the cooling and lubrication system as it is for the benefit of the car.

Chapter 6 - How to inspect steering and suspension alignment?

The suspension and the alignment of the car is an essential parameter to judge how long the car is to stay in effective function. There is a constant and ongoing need to take care of these so that the car has a longer life on the road. It is also essential take care of the alignment and the suspension of the car in order to avoid accidents and troubles. It is a sort of a delicate and intricate network that is full of minute and unavoidable details.

These are the parts of the vehicle that are so designed that it gives you even and smooth dream ride on the road. The reason why the part sometimes seems to wear out or even tend to break at times is because the suspension of the car happens to be ground zero at the time of rash road situations. After one has returned from a rough road trip and the car does not function like it used to, then there is definitely a reason you need to take your car to a doctor. It may be sometimes a tedious job to find out the reasons for the occurrence of such problems.

There is the need to be sure of what one is looking for and then there can be the effective steps taken to control issue. Taking your car for regular visits to a mechanic is a great sign of car love. This shall not just ensure that the car is safe and sound, but also instill in you a sort of self confidence to run the vehicle on the road without anything on the back of your mind.

There are a few essential steps that are important to follow. The essential alignment check of the car shall include the inspection of the steering and the suspension system. The tire conditions and the pressure of the air are also essential points to be

followed. There is the need to put the car on the alignment rack that shall monitor the faults and give effective cures for the same.

By the regular inspection of these things one can also remove the small faults in the car like the noises it makes and the vibration it unnecessarily produces. These are the things that should be kept in mind when looking for a good car service provider. These things have to be kept in mind so that there is adequate functioning of the car for a long time.

Chapter 7 - How to detect a fault in fuel and break system?

Brake and fuel system problems differ immensely with the model, the make, the age and various other variables of the car. If the car is having brake and fuel problems take it to the car mechanic. There are some brake and fuel problems that one can solve or narrow down.

Fuel system problems are usually hard to detect as the symptoms imitate other car problems. A fuel system should stay in good condition in case of the car because the fuel system is the soul of the cars. Fuel system can be detected by opening the car's choke valve and pulling the throb tie linkage backwards and forward. Dust is the major cause due to which the choke valve of the car often does not function properly. Spray the cleaners to make the choke dust free. Detecting the faults in the fuel system is very essential as one cannot tune up the fuel system once it is damaged, so it is very important to read the car manual provided by the car manufacturer carefully. This manual will help the driver to learn which defaults can occur, how they can be detected and how they can be fixed.

Here are some very important measures that one can apply to detect the car brakes like if it's safe, then drive your car at a low velocity and apply brakes as needed. If they shriek, then the driver may require new brakes or clean the car brakes. Step on the car brakes with the engine of the car turned off. If the brake seems to be mushy or soft then the car may be containing less brake fluid or may require bleeding the car brakes. In the clean area, step off sharply on the car brake pads. Now, if these brakes could not halt the car efficiently then many things in the car might be wrong such as contaminated brake

fuel, contaminated brake pedals and worn pads. If the car brakes pull it to only one side, then one needs to replace the brake pads/rotors, adjust the car brakes clearance, might have inadequate hydraulic pressure at one part of the car brake system.

Start driving slowly in the forward direction. If the car brakes drag or bind, it might be because of the grease on the scored rotors and brake pads. One should visit a car mechanic if one does not know the ways and methods by which the brakes are fixed. One can examine the car brake fluid on regular basis.

Chapter 8 - How to remove dents

scratches, odor and rust?

Purchasing a car involves a huge expenditure, so making the car rust proof is very essential if one wants to save the investment. Every scratch degrades the value of the car; let it be an ugly rust patch on the car. Besides looking bad and decreasing the value of the car, this rust might also harm the paint. Hence it is very necessary to get the car rust proof periodically.

The dent on the cars can be really irritating for the owner. One can remove the dent on the car with dry ice. Simply touch the dent with the dry ice between 30 seconds - 1 minute. Continue the procedure until the dent fades. One can also make a hole using a drill in the middle of the dent. Then fix a dent pulling equipment into the middle of the hole. When the dent is flat, fill the dump with the body filler and then cover it with paint.

A scratch can be very annoying on the car to the owner. To remove the scratch from the car, use dry/wet sand paper. Wipe the places with a neat wet cloth and then dry the place using a dry cloth. If the scratch is deep, one can use a little volume of body filler for the deep scratched places.

There are various ways to remove odor from the cars. First way is to remove the spam, clean and clear out the unwanted items from the cars. Clean the car thoroughly. Clean the hard areas present inside the cars with right kind of car cleaning material. Vacuum the trash and spay the carpet deodorizer. Shampoo the insides surfaces and parts of the car. Open the window panes in order to ventilate the car. If the smell is due to water leaks, then one cannot get a

funky smell until one is able to halt the rain water from entering in.

The steps that can be taken to make the car rust proof include firstly check the car regular basis for any nicks or scrapes. It is essential to find out such scrapes or nicks as rust mostly starts to grow from these little areas where the paint has eroded. Secondly clean the rust by using a sand-paper. When the rust is removed then clean the area by applying mineral spirits. Now paint the rust-free areas using touch up paints.

All these are some simple methods to remove scratches, dents, rust and odor from the car.

Chapter 9 - All about washing drying, inside cleaning and waxing

To maintain a car's good condition the first step is to keep it clean and polished. This can be achieved with proper washing techniques. It's essential to not only clean its outer body but the interiors also.

Cleaning the interiors is the simplest but the most important task. The interiors mainly consist of rugs, seat covers and upholstery. The first step is to vacuum out the dry and loose dirt. For proper cleaning the seat covers and rugs must be removed from the car before vacuuming. If the dirt doesn't come out then use a soft cloth with a mild shampoo to remove the stains if any from the fabric. Then let the seats dry before doing anything else.

To clean the dash boards use a towel and water only. To remove dirt from the enclosed areas take the help of the cotton swabs. One can easily dust the rugs with a bristled brush. While cleaning the different surfaces with some kind of product make sure that these are specifically made for cleaning the certain surface. The surfaces like plastic, vinyl, leather, upholstery or wood is required to be cleaned by different cleaning products.

Cleaning the exteriors includes the cleaning of the paintwork and the wheels. Before applying a sponge to clean the outer body of the car always rinse it thoroughly to prevent the occurrence of scratches. The proper rinsing technique is to start from the top and then come down. Pour a small amount of liquid soap in the bucket filled with water. Then soak the sponge in the soapy water and squeeze it to drain out the excess water. Just like the rinsing technique start the cleaning process from the roof of the car. Change the water and sponge while cleaning the

wheels. As these are dirtier than the other part of the car so use different equipments for its washing.

The most important part is drying and rinsing the vehicle. Again start the process from the top and get it rinsed downwards. Also use the spray of low pressure and moderate volume to avoid any damage to the paintwork. For drying the car use a microfiber towel of superior quality. These are more useful than the terry or chamois towels for preventing the appearance of new scratches.

Waxing is done to provide the shine and protection to the paint of the car. First of all apply the wax to one part of the car then after sometime buff it with a microfiber towel. Repeat the process till the whole body gets covered with the hard way.

Chapter 10 - Quick tips on how to tackle road emergencies

While driving on the road one is not sure whether he will get safely to his destination. Properly dealing with the emergency situations is a matter of life and death. How to deal with a worst situation must be known to everyone especially while driving. One has to face different situations like a cracked windscreen, tire blowouts, aquaplaning, break failure or car fires. All these can give a person scare of his life. So it's better to have some knowledge on one's hand before going out in the car.

Cracked screens are occurred because of cold weather or in some cases when the car gets a jolt because of the speed breakers. If the car is having any little chip just get it repaired as soon as possible to avoid any such situation.

Aquaplaning is occurred when the car doesn't remain in the contact of the surface because of the building up of the water. In the absence of the tyre treads one faces this situation. To deal with the situation allow the brake to slow down by removing the foot from accelerator. Avoid turning the wheels and also maintain the tyres in perfect condition.

Brake failure is one of the worst emergency situations. This can be countered with by getting the car serviced on the regular basis. In case of brake failures try the handbrakes or change the gear to the lower level to stop the car.

The tyre blowouts while driving a car on a speed is really dangerous as it leads to the loss of direction and control on the car. If one of the tyres of the car blows out keep the hold firmly on steering wheel and slowdown the car by putting it into the lowest gear. React quickly but calmly in this situation. Try

to bring the car to standstill on the roadside. To avoid this altogether get the tyres checked regularly.

One can't imagine a car on a fire. The main reason behind this is the faulty wiring. If one suspects it just get out of the car as fast as possible. To realize this thing is not easy. Some of the warning signs include smell of burning something toxic or plastic and in some cases the smoke also comes out from the vents. Stop the car immediately on the road if sense the danger of fire. Then turn the ignition off and try to get the hold of the fire extinguisher if present in the car. Keep a distance from the car after calling the fire brigade.