

speedy, safe, and reliable craft, that can be used as a tender for a larger boat or for cruising on its own account. The motor-boat, with a speed of from fifteen to eighteen miles an hour, and that can be relied upon to reach its destination, has much to recommend it to a yachtsman, and its use in naval affairs is unlimited.

The motor-boat's great field lies, however, among those who cannot afford a larger craft—the hundreds who satisfy their craving for sea life with a small sailboat or a steam-launch. The motor-boat is of such light draught that it can go almost anywhere in any river or lake, and its ease of handling recommends it to those who have not sufficient mechanical knowledge to operate a steam-launch or a launch with the regular type of marine motor. The manufacturers have devoted much attention to the production of an easily operated boat, and, working along the lines previously followed by the automobile manufacturers, have turned out boats which can be run with very little care.

MOTORING.

BY

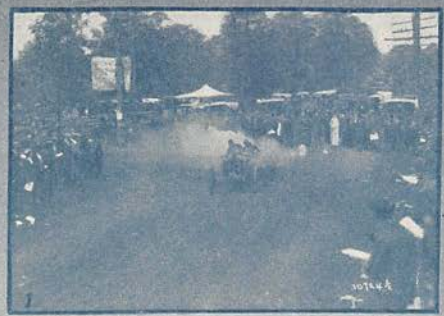
SIGMUND KRAUSZ, AUTHOR OF "KRAUSZ'S COMPLETE AUTOMOBILE RECORD."

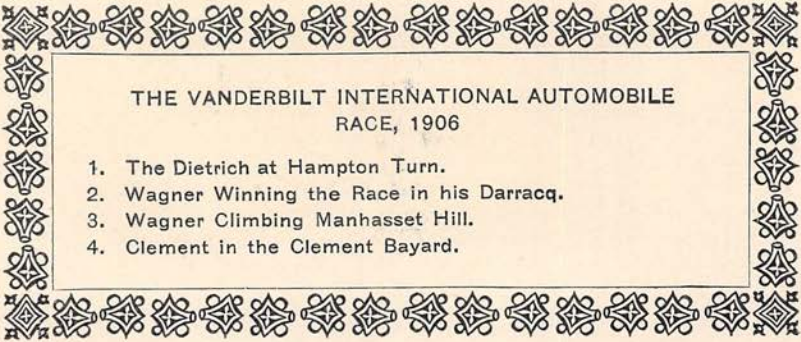
The Care of an Automobile.

WITH the simplification of the mechanism, the introduction of automatic lubrication, and the protection of the machinery against road dirt by means of metal aprons and gear casings, etc., the modern automobile does not give half as much trouble in its care-taking as of yore. Nevertheless, the man who runs his car himself, and wants to do it on an economical basis, will find that it takes considerable attention to keep an automobile in good condition, which is the only way to get proper service out of it. Neither should his attention, in the form of supervision, be omitted in case a chauffeur is employed, as many of these are only too negligent in the care of the vehicles entrusted to them. In both cases an intimate knowledge of the working parts of the machine is a necessity.

Undoubtedly, the most important thing in the preservation of the motor mechanism is the lubrication; but while a modern automobile, as a rule, has an effective system of automatic oiling for the principal parts of the motor, transmission, etc., there are still numerous components of the car which need personal attention. According to the wear to which the various parts are subjected, they will need more or less attention and a larger or smaller quantity of oil, the quality and

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THE VANDERBILT INTERNATIONAL AUTOMOBILE
RACE, 1906

1. The Dietrich at Hampton Turn.
2. Wagner Winning the Race in his Darracq.
3. Wagner Climbing Manhasset Hill.
4. Clement in the Clement Bayard.

consistency of which differs again according to the mechanism on which it is employed. The instruction booklets of the manufacturers give general information on this subject, but practice soon teaches the driver the best medium of lubrication.

It is superfluous to point out that the tanks and oil-tight casings for automatic lubrication of motor and gears should always be kept filled with their proper grease, so as not to need attention during the running of the car, but it is of just as much importance to see that the little nuts, screws, pipes, etc., which form part of the system, are properly looked after, since neglect in this regard often causes trouble.

Less frequent attention is demanded by the clutch and such parts as are included in the running gear system, as axles, hubs, springs, clips, etc., but care of them, at regular intervals, will well repay the trouble. Purely metallic friction clutches need, however, much more oiling than leather-faced ones. These are kept in good shape by an occasional wiping with a kerosene-soaked rag which removes the road dust. The leather facing should be renewed before it is much worn.

In the case of axles, which are lubricated by consistent grease in oil-tight casings, it is advisable to remove the wheels every six months or so for the purpose of thorough cleansing and re-filling with fresh grease. Hubs, according to the use of the car, may be lubricated every two to four weeks. Springs should always be greased as soon as the slightest squeaking is noticed.

In chain-driven cars, the chain and sprocket need much attention, as gritty mud and dust adhere to them in quantities, and cause considerable wear of the chain links, besides affecting the speed of the car to some extent. The drive chain should always be removed and cleaned after long tours. An hour's soaking, with subsequent washing in kerosene, will remove the dirt, and, after an oil bath, and dripping-off of the superfluous lubricant, the chain is again ready for use.

It is well to remember, in connection with the subject of oiling, that there is such a thing as too much lubrication, and that during the colder season thinner oil may be profitably substituted, in the oil pumps, for a heavier grade.

As to gasoline, this should always be supplied to the tank through some suitable filter, in order to keep out impurities which are apt to clog the fine channels of the carbureter, causing infinite trouble thereby, and in handling this fuel it should never be forgotten that night is not the time for filling a tank, and that a burning pipe, cigar, or cigarette is a dangerous neighbor. Where a larger quantity of gasoline is kept at hand, it should be stored in an underground reservoir at a safe distance from buildings.

It goes without saying, that the same rule of cleanliness applying to gasoline should apply to the water for the cooling system. Dirty water causes a sediment in the pipes which hinders the circulation. A fine sieve at the point where the water tank is filled will be found

of good service. Strongly alkaline water should not be used for cooling purposes, as it leaves a hard deposit on the heated parts of the motor, which is difficult to remove and causes trouble in the cylinders. The pump connections and other parts of the cooling system need occasional inspection and tightening. Freezing of the water in the apparatus must be prevented by all means, and, during winter, in an unheated garage, the cooling system should be thoroughly drained between use. If no good anti-freezing solution is employed, freezing, during short stops, can be prevented by letting the motor run at slow speed. During long stops it is more economical to drain. Relating to anti-freezing solutions it must be remarked that they tend to corrode, more or less, the metal parts with which they come in contact.

The carbureter, being the seat of much trouble when not perfectly working, should always be kept scrupulously clean, and it is not a bad plan to occasionally take it apart for the purpose.

In the ignition system, constant attention should be paid to perfect contacts, and these points should be cleaned from time to time with kerosene. The spark plugs must be inspected quite frequently as they are apt to get foul, in which case they cause misfiring. When examining them, the points of the sparking wires, if not at proper distance, may also be readjusted. The correct distance is about 1-32 inch. The isolating substance of the wires should be protected against the damaging effect of oil by wiping it off whenever necessary. As to the brakes, they will need an occasional readjustment and cleaning of the steel bands.

Tires in use ought to be always well inflated and, if practicable, repaired on the spot in case of puncture, as running a car any distance on a flat tire ruins not only the inner tube, but also the outer cover, and is a costly proceeding, considering the price of tires.

If the car is out of use for any length of time, such as during the winter, the tires should be inflated only sufficiently to carry the weight, or they may be altogether removed, in which case they should be kept in a dark and moderately cool place.

The car itself, after returning from a dirty drive, should be washed as soon as possible by means of a hose, wiped with a soft sponge, and polished dry with a soft chamois skin or clean waste. The upholstery may, from time to time, be rubbed with a vaseline rag to preserve the pliancy and lustre of the leather.

In general it may be said that it is better to spend the time necessary for the proper care of an automobile shortly after, than just before using it, when, in most cases, the work can be done more leisurely and thoroughly.

In conclusion, the motorist may be advised that it is a good plan to keep track of all expenditures in connection with the car, such as fuel, oil, repairs, supplies, etc., as it is a satisfaction to know, at the end of each season, just what the maintenance of the car

has cost. If an odometer has been attached to the vehicle, it is then, too, easy to figure out the running cost per mile. "Krausz's Complete Automobile Record" (Laird & Lee, Chicago) will be found the most practical book for this purpose.

The Art of Driving.

It is supposed that an intelligent man, having had no previous experience with automobiles, will make himself familiar with the various working parts of the motor mechanism before he attempts to drive a car himself. This in order to better reason from cause to effect. It is easy enough to learn to steer an automobile, but unless you know your machine thoroughly, this knowledge alone may not always be sufficient in case of a sudden emergency. Theory alone, however, is not enough. It takes practice, considerable practice, to acquire that nerve and rapidity of judgment which the motorist is often called upon to display, especially when driving in the crowded thoroughfares of a city, and what is said here is, therefore, only intended to serve as a useful hint to beginners.

Let us suppose you are in the act of starting for a drive, after you have imbibed some theoretical knowledge. You will do well to convince yourself, in the first place, that gasoline and water tanks are filled, carbureter connections and oil pumps open, all not automatically lubricated parts well greased, that the ignition apparatus is in good order, and the tires are properly inflated. Also see that the engine is out of gear, brakes and levers are working properly, and, in general, everything in tip-top shape.

After satisfactory inspection, step to the front of the car to start the motor, but not before you have turned on the switch for the ignition, and retarded the spark lever to proper position in order to avoid back fire and a consequent kick from the starting crank. In starting the motor of a light car, it is best to give the starting crank, after having pushed it tightly against the crankshaft, a few swift turns which, under ordinary conditions, will put the engine in motion. In high-powered cars considerable effort is necessary to force the crank over the compression, and it is advisable to use the power of the flywheel for the purpose. This is done by pulling the starting crank towards you, and letting it go again. If this is repeated several times, it will be found that the stored energy in the flywheel, with the further aid of a strong pull, is sufficient to start the engine going.

The motor being in motion, see whether oil pumps are acting, take your seat behind the steering wheel, and place, with one hand on it, the front wheels in straight direction. Release handbrake. Put the speed lever to first speed notch and, simultaneously, by depressing the proper foot lever, let in the clutch as gradually as possible in order to avoid a jerk. This will slowly start the car.

It becomes necessary now to watch how the manipulation of the

steering wheel affects the direction of the car, and for that purpose keep going at slow speed, without changing the position of the spark lever and throttle from that in which they were at the starting of the motor. Having observed and practised sufficiently the action of the car in response to the turns of the steering wheel, the spark may be slightly advanced, which will increase the revolutions of the motor and, with it, the speed of the car. It may be observed here that for the practice of driving, a dry straight road should be selected where there is little or no traffic, and that no attempt should be made to change to higher speeds before one feels safe in handling the car on the lower ones.

The change from a lower speed to the next higher one is effected by the simultaneous pressing of the clutch pedal, which releases the clutch grip, and moving of the speed lever from the first to the second, second to the third, or third to the fourth notch, as the case may be. In changing from lower to higher speeds it is well to increase, immediately before doing so, the revolutions of the motor by advancing the spark and retarding it again, as far as possible, at the moment of moving the speed lever.

In connection with this subject, it is well to remember that in going from lower to higher speeds, the speed lever should be moved with a short, quick motion. In the reverse case, the change should take place softly and gradually, and the revolutions of the motor should be diminished immediately before the change. In short, the process of going from a higher to a lower speed is exactly the opposite from that of going from the lower to the higher, described in the previous paragraph.

The reverse gear should never be operated while the car is going at high speed, except in cases of impending danger. In fact, the speed lever should be brought to lowest speed before reversing.

To momentarily diminish speed, the clutch has to be disengaged by depressing the clutch pedal, and to stop, the handbrake should be gradually applied in addition. If the stop is only temporary, the engine may be thrown out of gear, slowed down by means of the accelerator and retarding the spark lever, and allowed to run free. On returning to the garage stop and throw out of gear the motor, shut off gasoline and oil supply, turn off switch and, if necessary on account of coldness, drain the cooling system.

The beginner is especially warned to restrict himself during his early practice, even in a lighter car, to the first two speeds, and to withstand the temptation of not allowing other motorists to overtake him, a temptation which is strong in a novice who begins to feel that he is getting to master his machine. It will also be well for him to practise the use of the brakes and the entire shutting off of power for the purpose of learning to make quick stops, even if this is done at the cost of some wear to the tires. Once thoroughly familiar with this process, it should only be used when absolutely necessary, as too

sudden stopping is a tremendous strain on the tires, and often causes skidding, even on dry roads.

Special care should be taken when driving on wet asphalt pavements or other slippery roads, and more so if the tires are worn and unprovided with an anti-slipping device. Under such conditions, sometimes a slight movement of the steering wheel or an obstacle in the road is sufficient to cause skidding, and in this case, the novice will always feel tempted to apply the brakes. This is a mistake which, however, is not apt to be serious if the car is going at slow speed. On the other hand, the applying of the brake to skidding wheels is a dangerous affair when occurring at high speed. It is by far better to shut off the power entirely, as the car, while running on the momentum only, is easier of control, and the power, unless the car has stopped or is moving too slowly, can be picked up again on a slow speed when it is seen that the vehicle once more obeys the steering wheel.

The noise of the engine is a point which should be studied, in order to be able to distinguish by sound whether there are any defects, or whether, in cases of hill-climbing, the engine has arrived at its limit of power, in which case a change to lower speed is necessary to prevent the stopping of the car.

With advancing proficiency in driving, it is well to pay attention to the economical running of the car in the way of using less fuel by the proper handling of throttle and spark lever, and allowing the vehicle, in suitable places, to run on its momentum with spark and mixture supply entirely shut off. Having mastered the intricacies of driving, and with growing practice, the driver soon will learn to observe and distinguish, without taking his attention from the road, all the various noises of his machine which either indicate that everything is all right, or that there are defects in certain parts of the car mechanism which need looking after. Having arrived at this point, he will fully enjoy the pleasure of motoring in a self-driven car.

As to the proper conduct of the driver on the public roads, a careful perusal of the following is earnestly recommended.

Automobile Etiquette.

General Hints to Owner and Driver.

There is unquestionably a strong prejudice against motorists in general, which, while sure to be overcome in due time, is to-day a factor never to be lost sight of by owner and driver. In order sooner to eliminate this prejudice, the following points should always be kept in view:

1. Become well acquainted with the laws and regulations of your state and municipality relating to automobile traffic, and obey them rigidly.

2. Don't take intoxicants when you expect to go behind the steering wheel, or even when being driven by your chauffeur. Chance may force you to the driver's seat, and liquor is the worst enemy of an automobile driver. In engaging a professional chauffeur give preference to a total abstainer; otherwise see that he is in perfectly sober condition when you want his services.

3. See that your car does not emit too offensive an odor or too much smoke. With a little care this can be prevented, just as well as the excessive dripping of oil which especially damages the asphalt pavements.

4. Don't make too liberal use of the horn. It is annoying and often confusing. Use it when necessary.

5. In driving in the city, always consider that you don't own the road, and that other vehicles, cyclists, and pedestrians have the same rights as you. Never allow your attention to be diverted from the road ahead of you, and keep

a sharp lookout at crossings, near crowds, and especially in streets where children are playing in the road or on the sidewalks. The latter are apt to run out into the street in the excitement of play. Don't get out of patience if, in a spirit of mischief, they throw things at the car, or apparently, try to cross in front of it. It is aggravating, but it is better to stop than to take chances. If something happens the public will be against you, no matter how innocent you are in the matter.

6. In driving over country roads, use judgment as to speed. Never drive fast unless you can overlook the road for a considerable distance ahead of you, and unless it is absolutely free of obstructions in the shape of man or beast. By no means exceed the speed allowed for the location. In meeting a horse-drawn vehicle remember that country horses are not usually broken to automobiles. Slow down in passing, especially if their driver gives a sign to that effect. If the animals appear much frightened, stop your engine until the vehicle has passed you. Be considerate as to animals on the road, and if you happen to inadvertently kill or maim one try to find its owner. Don't run away. Car numbers are easily read, and it is much cheaper and more convenient to settle amicably on the spot than to be cited to court. Remember this maxim too in case of collisions where the damage extends only to material.

7. In case of accident to human beings, resulting in injuries or fatalities, whether caused by your own carelessness or not, show kindness and utmost consideration. Act as a man should act. Don't shirk responsibility. Give your name and address willingly to the interested parties, but be careful to establish the responsibility for the accident, there and then, by witnesses if you are not at fault. In any case, show humanity, and drive the injured to where he can get quickest medical aid. Consideration and kindness will always act as a mitigating circumstance when it comes to a jury trial. Brutality is a boomerang.

8. Stop at the first sign given by a police official, and don't get into a heated argument with him, even if you have the right on your side. A little politeness often saves trouble and fines.

9. Carry insurance against damage to your car, as well as against financial loss resulting from damage suits of any nature arising from motor accidents. There are companies making a specialty of such insurance. Under no conditions, however, allow the fact that you are insured to operate against due care in driving your car and the general observation of the hints given above.

POLO AND SOME FAMOUS PLAYERS.

BY

J. J. McNAMARA, POLO AND AUTOMOBILE EDITOR, "BOSTON HERALD."

POLO is a man's game, as in order to play it successfully the highest development of the very best qualities in ideal manhood are absolutely necessary in addition to the skill required in playing individual positions and helping out in team work; and another important point is horsemanship, without which no man can win laurels on a polo field.

Some of the qualities required of the player are a lively, active brain which can size up a situation instantaneously, and judgment of a superior nature also forms a prominent part in the make-up of your high-class polo player. An eye for the game which must be as true as that of a court tennis player is essential, a spirit of unselfishness must also be cultivated, and besides physical courage and endurance are not the least important factors in the make-up of the gentleman whose fancy turns to the most attractive game in the realm of outdoor sport. The riding is unlike the style taught by the riding master for the park bridle path or the seat used for hunting or racing. In polo the riding must come by second nature, and the man and the