...primer and Bert Dingley. ...principal trophies won are ...assapequa, Merrimac Val... ...Wemme and Motor Mara...

...ry. Here is more than ...of machinery—every ap... ...t, necessary to the building ...—and a large force of ex...

...rtment, too, is a testing ...he experimental materials ...d. On machines designed ...e, steels, bearings, brakes, ... fact, all parts of the car, ...gh tests which result in ...ution. ... which a bearing goes to ...ain which a wheel stands ...g, the tensile strength of a ... of these things are care... ...l. Mufflers, carburetors, ...so forth are worked to the ...endurance on running cars.

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...eted this car is given at ...of grueling work. The en...out on all kinds of roads, ... weather, up all kinds of ...he Atlantic to the Pacific ...achine shows even a minor ...sent back to the engineer...t and corrected. At the ... it must pass a standardi...ation which admits of no ...oved perfect by this exam...nent plans are then made ...ginal drafts, requisition ...re made out and the new ...n to the factory to become ...he Chalmers output. ... when the public is just ...nerits of the 1910 models, ... department's experiment... has been on the road for ...ng such trials as never be...f one automobile in 10,000 ... And work is rapidly go... ... the designs for 1912. In ... yet another experimental ...ing through its paces. In ...lways a new car made or ...e engineering department ... always men laboring to... ...n in automobile construc...

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MARMON FOLLOWS NEW SPEED THEORY

Constructs Special Racer Intended to Reduce Wind Resistance to Minimum.

WEIGHT ALSO BIG FEATURE

Car of Large Dimensions Will Not Be Handicapped With Friction Removed.

By Howard Marmon.

The great increase in the number of contests over previous years and up to the close of 1909, with a further increase in contests for 1910, has caused the contest board of the American manufacturers to give more than passing attention to the racing rules to govern contests for the season of 1910. While the general outline of the rules has been left very much as they were last season, new classes have been arranged, while rules to more firmly establish just what constitutes a stock car and stock chassis are more sharply drawn.

The manufacturer of 10,000 or more cars can no longer fall behind the clause of twenty-five special machines and thus enter contests with his handicapped competitor, who is unable to build that number, but he must now build a sufficient percentage of his output on certain lines, that dodging the stock chassis clause is well-nigh impossible. Additional latitude is given the manufacturer who desires to build a racing car and still compete in classes other than the free-for-alls, in

COST OF RUBB

MAKES RUSH FOR

LOCAL MANUFACTURER TELLS OF DIFFICU PRICES AND SA MAY GO HIG

By G. J. H

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Possibly one of the m lems that is confronting manufacturer today is th tire equipment, and, whil been a matter of greate him, conditions at the such that will cause mu the part of the manufa the unprecedented advan crude rubber during the

It is just about two fine Para rubber, whic garded as the standard, from a normal price of price of 67 cents a poun market, due, no doub which prevailed at that time on a steady advan prices, and in November reached a price of $1.29 mencing with a price of $ crease in the price of thi was maintained until ab year rubber reached in when all at once, owing great demand for crude began to jump very sudd vember a high water m reached. This was co time the limit in the w and manufacturers of consoled themselves w that markets would v easier, that the new cr the situation and that ally would be better.

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CHOT PUDDING.

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ot, some like 'im cold, Taft
likes 'im not an' fired 'im

The manufacturer of 10,000 or more cars can no longer fall behind the clause of twenty-five special machines and thus enter contests with his handicapped competitor, who is unable to build that number, but he must now build a sufficient percentage of his output on certain lines, that dodging the stock chassis clause is well-nigh impossible. Additional latitude is given the manufacturer who desires to build a racing car and still compete in classes other than the free-for-alls, in which he has to contest with the monster freaks, with which he would have little or no chance.

Division C of the racing rules nicely handles this class of machines with the cars arranged in classes of various piston displacement, though with no limit on their weight or stock parts.

Wind Resistance is Problem.

We have built a special racing car for this class. It will race in class 5, division C, for cars of from 450 to 600 inches piston displacement. This six-cylinder will weigh close to 2,200 pounds, but with its pointed radiator and sharpened "fish" tail its speed is a matter of speculation at this time.

I have always contended that it is not as much a matter of weight to promote speed as it is a matter of reducing wind resistance. A motor properly turning up at its highest speed will carry a few hundred pounds, more or less, with or at practically the same speed. It requires more time to start a heavy car than a light one, but once started and well under way over a fine surface, such as is furnished at the Speedway, a couple of hundred pounds makes but little difference.

But against a wind surface, that is the vital question. Under ordinary speed this is not as important, but as the speed is increased it takes additional horse power to overcome the resistance, and as each additional mile is added the power required increases at a phenomenal rate.

A car that with a given horse power would travel at the rate of 100 miles an hour (if it had much wind surface), might require just double its horse power to travel at the rate of 120 miles an hour, so rapidly does the load from wind resistance increase.

Experiments Give Results.

Scientific experiments have demonstrated that the wind resistance at high speed forms a suction of block against the surface resisting it so that it absorbs power at a phenomenal rate after a certain speed is attained. This was proved at the Brooklands track.

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The great Benz with a flat radiator was run at the rate of 105 miles an hour and seemed to be at the limit of its speed. A pointed radiator was then made, the starting crank was pointed, as were the axles and every wind resisting surface, while a pointed "fish tail" to overcome suction in the rear was added. The car that required all of its enormous 200-horse power to travel at the rate of 105 miles an hour, at once reached the remarkable speed of 137 miles an hour for a short distance, while it may even do better than this at Florida Beach. I have held this contention for years, but this has been the first year in the history of automobile racing that the various types of cars have been classified and with Division C of the racing rules limiting displacement, but placing no limit on the type of car, we have made one of our machines to comply with this rule and it now remains to be seen whether or not my theory is ab-

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I expect this special machine, with wind resistance reduced to the minimum, to travel forty miles an hour faster than the same car which we are making into a stock model, but with the regular wind resisting radiator and construction such as is found in stock chassis.

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Anti-Noisers Oppose Too Brass and Make Re gestions.

BOSTON, Mass., March 1 the new-fangled auto horn anti-noise societies to p they proclaimed before the mittee on roads and bridge be freed from it.

Among those who appeare Spring assistant corporatio bill, which provides that n ing a motor vehicle in the portions of cities or towns horn or other device except dinary horn operated by ha titioned for by Royal Robbin

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"One toot, coming; two three toots, got him; four with the police in hot pursu

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