

Montana 500 Newsletter

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Montana Cross Country T Assn.
1004 Sioux Road
Helena, MT 59602

www.montana500.org

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Membership dues \$10.00

Touring class: \$25.00

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Cover shot: Pre-race inspection at
Big Sky Exxon, Eureka Montana,
2004

Editor's Propaganda

Tom Carnegie - Montana 500 newsletter editor

Dues are due! Check your name on the address label. If it doesn't say 2005 or lifetime you are past due!

The 2005 Montana 500 will be held out of Lewistown Montana, June 19th-23rd. The pre-run inspection will be Sunday the 19th. The run will commence Monday the 20th. The base hotel will be the Yogo Inn 1-406-538-8721. Reservations should be in by the end of May. Please keep an eye on the Montana 500 website for last minute notices.

Please read and be familiar with the rules. Make sure bolts are drilled! It might be a good idea to bring an extra carburetor. If the inspectors can get the gauge to go through, your carb will be disallowed. Rain gear can be in order in June in Montana (snow gear for that matter). Last year the bank in Libby said "101", so all scenarios are possible.

This space reserved for President's message

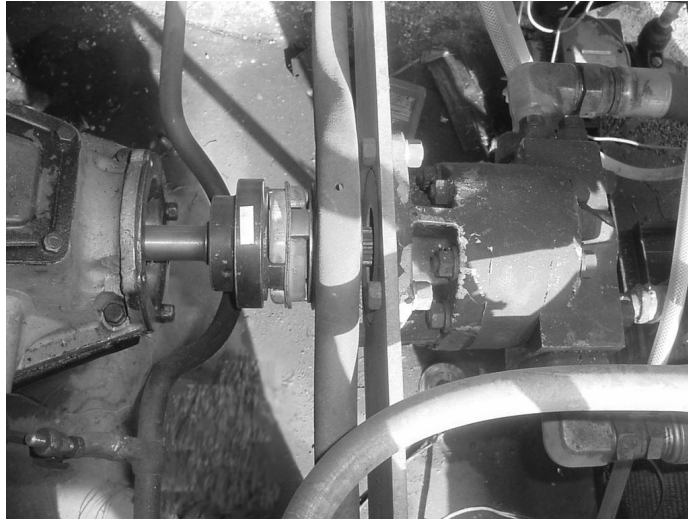
A Poor Man's Dynamometer

Tom Carnegie

Most Montana 500 people have a pet way that they test their model T's to see if their tweaks have improved performance. Some may involve driving up a certain hill. Others may involve driving flat-out on a certain stretch of road. Among the problems I have with these methods is the inability to control outside variables that may effect the results of these tests. The chief offender is wind. Wind has a huge effect on the performance of a model T near its top end. Other factors that can effect results are air temperature, humidity and barometric pressure. Even how you are driving or traffic can have effects. It is also hard to change things in real time and see instant results. The answer to all this is a dynamometer, of course.

Dynamometers for large horsepower motors are very expensive. A model T only puts out around 20 horsepower, so there is a fairly easy way to make a suitable dyno dedicated to testing T motors. What a per-

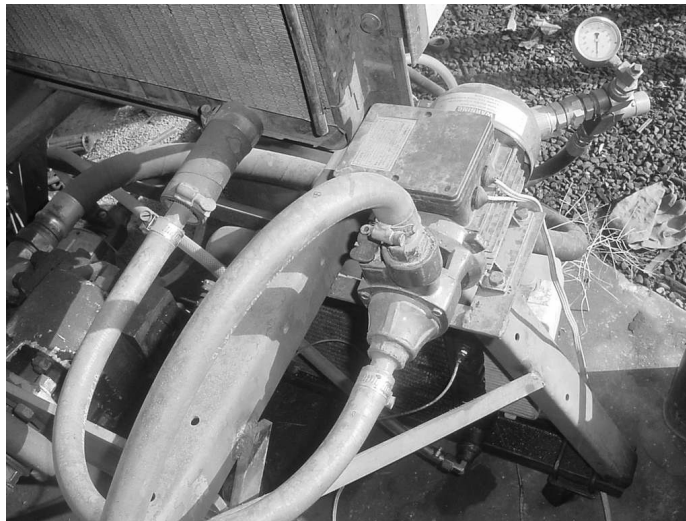
son needs is a hydraulic pump coupled to the back of a T motor. On my poor man's dyno, I used a 1.53 cubic inch pump. By taking the pump size in cubic inches "C" multiplying it by the RPMs, "R" and dividing by 231, you get gallons per minute "G". $CR/231=G$. G times pressure "P" in pounds per square inch divided by 1628.3 equals horsepower "H". $GP/1628.3=H$. H times 5252 divided by RPMs, equals torque. "T" $H5252/R=T$. It is very easy to set up a spreadsheet in Excel or some



This is a shot of the T motor coupled to the pump. The coupler has a piece of reflective tape for use with the optical tachometer.

spreadsheet program to do the math for you on this. There are also SAE formulas for compensating for various ambient weather conditions that can be integrated into this spreadsheet. If any one needs help with a spreadsheet to do this, let me know and I'll get one going for you.

Once you have the pump coupled to the motor, you will need a valve to restrict the flow of hydraulic fluid. My homemade



For water and oil circulation I used impeller pumps. I plumbed the water lines with half inch flexible hose. The radiator is an old car radiator cooled with a box fan.

dyno uses a 15 gallon barrel as a tank and the fluid is pumped from the tank, past the pressure gauge, through the restrictor valve and back to the tank. Turning off the valve restricts the flow of oil, and puts a load on



This shows the oil storage tank, the restrictor valve and the oil cooling fan. I ran the oil through a small radiator to help cool it too.

the motor. When you are testing a motor, most of the power is being dissipated as heat into the oil. It doesn't take very long before the oil is too hot for the pump to pump safely. I have a separate circuit on my dyno to pump the oil through a cooler so that I can test motors for a longer stretch at a time. I also have a radiator and pump to pump cooling water through the motor being tested. In addition to measuring the hydraulic oil pressure, you will need to measure the RPMs of the motor also. One way to do this would be to install a distributor and hook a tachometer up to it. The way I do it is with a handheld digital optical tach. You put a piece of reflective tape on a rotating part and shine the tach onto it. It then tells you how many revs are happening. Pretty slick, and it will work with timer and coils.

That is really all there is to it. Depending on your engineering skills, this should be fairly easy for most people to do. At today's prices I think a person can build one of these for under \$1000.00 dollars.

(end of article)

Butch Impresses Bettie

By Tom Carnegie

I have been living in Baton Noir since 1906, nearly fifteen years now. I'm not going to tell you my name, because that isn't important. The fact is, I keep my ear to the ground and as such I'm a great dispenser of gossip. A while back Butch told me of a revelation that he had. He had seen poles in the lumberyard that were pointed at one end and treated with something to keep them from rotting. Butch is a great one for telling us about his dreams. He said that he was asleep one night and it became crystal clear how these aforementioned poles were made. In the lumberyard is a very large praying mantis that pulls a pole from the pile and sticks it into a very, very large pencil sharpener. After giving the handle a few cranks the mantis then hands the pole to a large

grasshopper who treats the pole with a good load of tobacco juice. But I digress. I want to tell you about Butch's attempts to win the favor of Bettie. Butch always had a hankerin' for Bonnie Doon, but he was out-gunned by a veteran of the Great European war. He wasn't too upset though because he decided he liked Bonnie's sister Bettie better anyway. Early one evening he happened by the Doon fox farm where Bettie lives. 'Just happened to be in the neighborhood', he said. Bettie was there and they were talking out by the driveway. As they talked a family of skunks came out from behind the woodpile and started ambling across the driveway. Butch pointed out their existence in such a manner as to startle said skunk family. Mama skunk proceeded across the road while five or so baby skunks decided to stay near the woodpile. It bothered Butch that

these skunks were separated by the 12 foot expanse of the driveway, so he decided to take action. A more passive person might have just left the divided family alone on the off chance that they could reunite themselves, but not Butch! He thought that maybe he could just herd these baby skunks out of the woodpile and across the road to their poor lonely and anxious mother. Butch wasn't too worried about getting sprayed because he had heard Joseph Vant say that baby skunks don't spray. Well, these skunks must have been young adults because Butch did very little prodding with a stick before one of them let go. Bettie was not impressed.

Hayes Olson is a beekeeper. For the fun of it he made a beehive with glass sides so you can watch the bees work. The hive is built into the side of his shed with the glass side facing the in-

terior of the shed. He had shown this hive to Butch and Butch was intrigued. One evening, with Hays's permission, Butch decided to show the hive to Bettie. Bettie had misgivings about looking at bees, but Butch convinced her that they were very docile, especially in the evening. They were talking and watching the bees in the semi-darkness of the shed when Butch noticed that the bees would periodically start to buzz. He soon realized that it was their breath from talking that made them buzz. He thought it might be fun to really get them buzzing, which he did by blowing through a gap and directly into the hive. The bees apparently didn't like this. They sent a group out to see if they could identify the problem. Unfortunately, Bettie was so identified. She was stung twice, once on the forehead and once on the lip. Needless to say, Bettie was not impressed.

I wasn't there for this last episode, but I think I can relate the story fairly accurately. A tank truck was at the service station to refill the tanks. The truck driver was smoking a cigarette whilst he strung out the hose. Joseph Vant was there and asked the man if smoking and filling tanks were such good things to do together. The truck driver intoned that he thought it was ok. Joseph then asked the man if he had ever heard of anyone having problems with gas and fire. The man said that he had not. Joseph then suggested that maybe this was because they didn't live to tell anyone about it. The truck driver then advised Joseph of the vulnerability of his nose and suggested that it might be in his best interest to keep it out of other people's business. Joseph did the prudent thing and walked away. As if to prove a point the man flaunted his

cigarette as much as possible from that point on. He got results. In the course of the filling operation somehow the gas was ignited. As the flames began shooting out of the hose the man did the prudent thing - he ran away. I guess it was quite a sight seeing the flames coming out of the hose. The shouts brought people from all over to witness this spectacle. Butch and Bettie were attracted to the scene in this manner unbeknownst to each other. Very soon most of the formerly attracted crowd got a big dose of prudence and decided that they didn't want to witness the final outcome of this unfolding scenario. A few people hung nearby and wrung their hands. The tanker driver hung around, but didn't wring his hands as they were slightly burnt. The valve on the hose was partially on, so the flow of the gasoline was somewhat restricted. The hand wringers wondered what

would happen when the hose became consumed and the gasoline came out full force. Contemplating this, several more brave souls became prudent. Butch being a man of action and imprudent, grabbed a garden hose and turned it on. He headed for the tanker. Joseph shouted at him to stop, as the water would just spread the gas and hence the fire. No one expected what Butch did next. He headed straight for the tanker and crawled to the top. He lifted the lid on the top and dropped the water hose in and shut the lid and jumped down. He then became prudent and ran away. In a very short time water began coming out of the hose instead of fuel and the fire extinguished itself. The service station was spared any major damage, the truck driver was much relieved, the few imprudent people were spared their lives and denied a really good firework show. The best news of all is that Bettie was impressed!