Montana 500 Newsletter

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

www.montana500.org

2009 Officers and Directors:

President: Mike Robison
Vice President: Tony Cerovski
Secretary: Jillian Robison
Treasurer: Janet Cerovski

Directors:
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Dave Robison 2010
Tom Carnegie 2011
Doug Langel 2011
Janet Cerovski 2009
Mark Hutchinson 2009
Mike Robison 2011
Tony Cerovski 2010
Jillian Robison 2010

Meeting Secretary: Jillian Robison
Correspondence: Tom Carnegie
Newsletter Editor: Tom Carnegie

Membership dues $10.00
Touring class: $25.00
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Cover picture: Mark Hutchinson transfers the trophy to Garrett Green. Thompson Falls, 2008

EDITOR'S PROPAGANDA
Tom Carnegie

Why is there a picture on the cover from 2008? Because there is a story from 2008! Thanks to Nan Robison for a run-down of 2008. Also thanks to Mike Stormo his article. Hopefully this will be an ongoing thing. The minutes are in this newsletter. Please see the website for the updated rules.

THROUGH THE GRAPEVINE
Tom Carnegie

Jillian Caples became Jillian Robison as she and Mike were married this summer. I have heard that Sandra Pinder and Herb Frick may try to run in 2010. I took the liberty of inviting Ed Towe to the 50th run from Fairview to Missoula. Here is his reply:

Billings, July 28, 2009

I will be glad to come to the model T race in 2010 if I am still alive by then. Send me notices. I haven't had your monthly letter for many months? I am 95 years old now, and don't have a driver's license anymore. (I don't hear or see very well anymore).

E.T.

p.s. I still have my 1914 touring, restored in Arizona, and drove it a little two months ago.

2008 Montana 500

Nan Robison

(From Tweetybird's eye)

Wow!!!! If the 2007 Montana 500 blew in with gale force winds, the 2008 came in on rays of sunshine. The weather was bright and shiny the whole time. It rained one night, but most of us slept through it.

Mike, Jillian, Mark, Janice and I all traveled from Spokane together. Dave and Joe Swanson took a different track and rode off on motorcycles. It was a leisurely trip for us this year, as Thompson Fall is more in our neck of the woods so we didn't have to leave days in advance. We had almost arrived in Thompson Falls, having reached the top of the pass. We pulled into the layby at the top of the pass to stretch our legs and take a look at the view. We were enjoying the beauty and quiet of the mountain, when the stillness was shattered by the roar of an un-muffled model T. Up the road came Garrett Green and Sonny Bishop. They were road testing their cars, and as luck would have it, we happened to be in the same place at the same time. Greetings were exchanged and snowballs thrown. We all left together and headed to town.

When we rolled into town we were met by other drivers that had already arrived. As usual, tires were kicked and lies told as we greeted drivers from past races.

We had 16 racers this year and an assortment of tour cars. Coming back after a four-year absence was Brian "Red" Cress, from Bismark, IL. It was great to have him back. He wins the farthest traveled award. A newcomer this year, was John Carlin from Graettinger, IA. He had a story to tell and hopefully I will get a chance to spot light it in another publication. Colorado Springs, CO saw the Coniff family, Steve, Joey, and friends. Garrett Green and Sonny Bishop hailed from sunny California, and the Montana contingency sported Doug Langel, Tony and Janet Cerovski, and Mike Cuffe. Last but not least, Washington offered Mike Robison, Jillian Caples, Mark Hutchinson, Rick and Tom Carnegie, Ed Marshall, and myself. We had a variety of tour cars also this year.

As we awaited inspection to begin, there was a flurry over by Sonny's rig. Apparently on the way down the mountain, he lost a rod. As is the nature of the 500 group, drivers and crews were scrambling to come up with a way to repair his car. Someone came up with a rod, but it was not the same size as Sonny's. So, with bailing wire and butter (family joke-ask me about it some time) they managed to jury-rig a rod that would work in Sonny's car.

Inspection went off with out a hitch, and the evening meeting saw the following places picked. 1-Garrett Green, 2-Red Cress, 3-Joey Coniff, 4-Sonny Bishop, 5-Ed Marshall, 6-Tony Cerovski, 7-John Carlin,
8-Jillian Caples, 9-Tom Carnegie, 10-Mark Hutchinson, 11-Doug Langel, 12-Mike Robison, 13-Rick Carnegie, 14-Janet Cerovski, 15-Nan Robison, 16-Mike Cuffe. Once again, we were given our pre-race instructions, cautioned to use care and common sense and off we went for the night.

Day one of the race dawned bright and sunny. Our first leg was from Thompson Falls to the intersection of Highway 5, 39 miles. Tony never made it off the trailer. His car was just not sounding right, so he opted to not race. This first leg proved to be the nemesis of two other drivers. Red and Doug both threw a rod. Ouch!!! The remainder of the legs were not fatal until the 4th leg. Mike Robison's center main had been sounding pretty rough and it gave up the ghost on that leg. He chose not to destroy his engine, so he loaded his car on the trailer. I was doing well, staying about 8th until the 5th leg. Tweetybird was running smooth when suddenly she started missing. I scrambled to test coils, and sure enough, one was gone. Now my brothers and son are great at changing coils on the fly, but I have not mastered that skill yet. (I am working on it though) I didn't even have a coil on the seat with me, which I now understand is standard procedure! I debated whether to stop and change one out, or just limp along until the end of that leg. I was running at about 35 mph, so I decided to just wait it out, as I was almost at the finish of that leg. Ed and Jillian made some time up on me, as I crawled in. I changed my coil at the stop and was back in the race for the last leg.

The remainder of the day proved fairly uneventful for the rest of the drivers. Joey Coniff's car was running fine, coming in almost fourteen minutes ahead of the #2 car, Tom Carnegie. Tom was followed by Garrett who was three seconds behind. Next was Rick, with Sonny, Mark, Nan, Jillian, Janet, Ed, Mike Cuffe, John and Mike R. John had just got his car going before the race, and was still dialing it in. He improved with every leg.

Day two greeted us with more sunshine. With the cars going out in reverse order, John headed up the line.

Joey continued to run well the first leg. Rick and Garrett stayed steady, with Tom losing a few seconds. I gained about 5 seconds on Sonny that leg, and every one else maintained their spots. Leg eight proved to be the nemesis of Ed and Joey. Joey's timer started acting up and he lost almost twenty minutes as he tried to fix it. Ed had an oil issue and froze his engine. Rats!!!! Tom gained some seconds on Garrett, and Sonny some on me. Rick and the rest hung on . Garrett and Sonny picked up the pace on leg nine with the rest following. Tom caught up on leg ten and Sonny lost some ground I picked up few seconds on Garrett, (how odd) with Jillian only a second behind Garrett's time. Janet, Mike Cuffe and John maintained their positions. The day ended with the fastest time for the day going to Tom, with Garrett second (only 5 seconds behind) and Rick third. Sonny, myself, Jillian, Joey, Janet, Mike Cuffe, John and Ed followed.

The start of day three again greeted us with sun. Tom took off with Garrett in pursuit. Garrett only had to make up 5 seconds, and he was on a mission! Rick only needed to maintain his position to be in the top three, so he hunkered in. The rest of us could only keep up, so we sat back to enjoy the sunshine. Garrett came in on leg 12, 39 seconds ahead of Tom. He not only made up the 5 seconds, but gave himself a bit of a cushion! Tom ran well, but just couldn't quite come up with the goods. Rick and the rest of us didn't change much. The last leg saw Joey picking up some time, and Garrett losing some, but not enough to count. Garrett, Tom, and Rick were headed for the tear down, with Joey, Sonny and myself on hold. There were no disqualifications and the 2008 Montana 500 became history with Garrett Green-1st, Tom

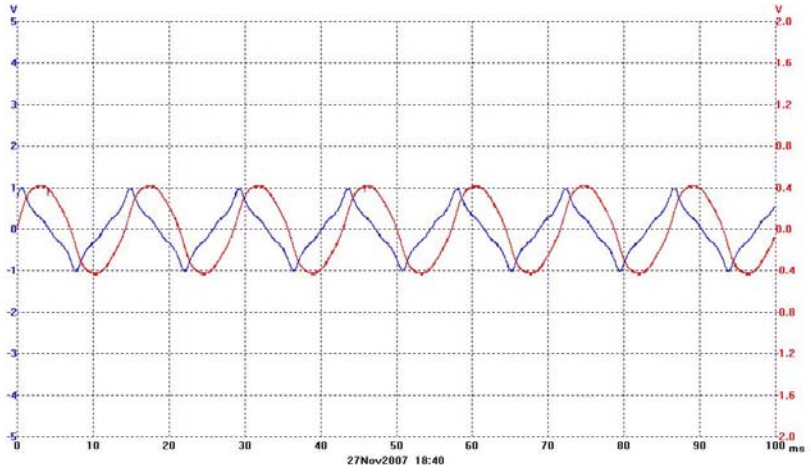
Perhaps More Than You Wanted To Know About The Model T Ford Ignition System
Tom Carnegie

Part Two

Introduction:

Most of my readers should be fairly familiar with the operation of the model T Ford ignition system. The purpose of this article is to give an in-depth look at the system - not to draw any conclusions necessarily, but rather to just show what is going on. I will show some oscilloscope traces of what I've observed. I will try not to be "technical", but because of the nature of the situation some "technicality" is inevitable. I will not spend a lot of time defining terms, as that would make this article much longer than I want it to be.

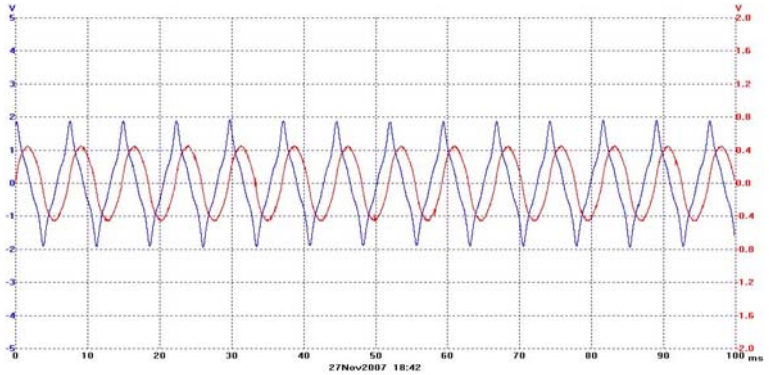
AC operation: The model T magneto puts out a form of alternating current. Below is a graph of a magneto powering a model T coil. The points on the coil were shorted out.



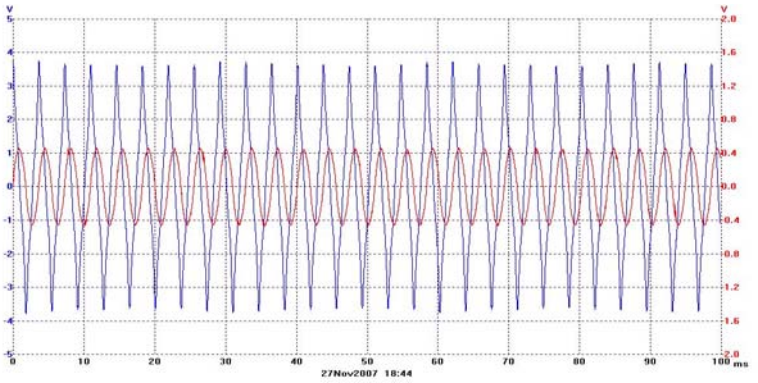
The speed of the magneto was 500 rpm. The voltage is the spiky waveform and the current is the smooth waveform. The voltage is about ten peak volts and the current is about four

amps. Most ac voltmeters show rms voltage. Rms voltage is equal to the dc voltage value that would produce the same amount of heat as the ac voltage. For the model T magneto waveform the rms voltage is about 1/2 of the peak voltage.

A word about 'scope traces. These graphs are just an approximation of the actual situation. Voltage, which is also known as electromotive force (emf), tension, electrical pressure and potential, is not directly measurable. The only way to look at voltage is to sample the effects of the potential across a resistor and then measure the current. All voltmeters work in this manner. Sometimes a mechanical analogy will help a person to understand an electrical situation. Mechanical pressure gauges work in the same manner as a voltage gauge. For example, a tire gauge measures the distention of a diaphragm of known resistance. Just as it is impossible to read tire pressure without using a little bit of the pressure within, it is impossible to measure voltage without using up a bit of it. The voltage waveform on the T magneto can be skewed by a number of things. Any load on the mag skews the waveform. For example, a lightbulb, or some such resistive load will apply drag to the magnetic field created by theflywheel magnets. This torque will pull the magnetic field backwards. For example, if you are running on mag and have mag powered headlights, your ignition timing is going to be retarded by at least as much as the load of the headlights is skewing the voltage waveform.
Below is the current and voltage waveform taken through the same coil as before. This time the magneto is turning 1000 rpm.



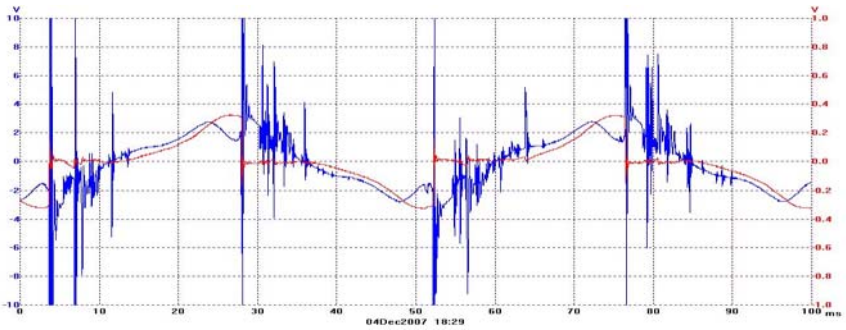
The voltage is now about 20 peak volts. The current, however is still at about four amps. The current essentially stays the same because as a load, the model T coil is mostly reactive. This means that as the magneto tries to put current into the T coil, the T coil tries to put current back into the mag. The faster the mag tries to put the current in, the more the coil resists and a sort of equilibrium is reached.



This graph shows the action at 2000 rpm.

If the T coil were a perfect inductor with a perfectly reactive circuit, it would shove exactly as much current back into the mag as the mag shoved into it. Alas, nothing is perfect. The circuit has some resistance so it loses a little there. This is called “copper loss”. The coil itself has in addition to copper loss some magnetic inefficiencies. These are mostly in the form of eddy currents and hysteresis. Eddy currents are currents imparted to the magnetic core. This current is not used and therefore wasted. Hysteresis is another word for backlash. In this case it is magnetic backlash. The alternating current magnetizes the core alternately north, then south and so on. When the field switches polarity there is a little lag because the core sort of wants to keep its polarity the way it was. The combined magnetic losses are called “iron losses”.

Our main point of interest in regard to the operation of the model T coil on magneto is hysteresis. Not only magnetic hysteresis, but mechanical hysteresis. Mechanical hysteresis is mainly from two sources, the inertia of the points and the point drop on the upper point.



Above is a graph of a coil firing as if on a hand-cranked coil tester. The volt and amp scale are both from –10 to 10. There are 8 cycles per revolution on a T mag. There are 60 seconds in a minute and 1000 ms in a second, so if we take the time of a complete cycle (about 50ms in the above graph) and multiply its reciprocal by 60000/8 we will arrive at the rpm. The above graph was taken at about 150 rpm. At this speed it takes about 14ms for the coil to fire from the zero point on the amp waveform. The coil fires just slightly on the downward side of the amp peak. I believe this is a result of mechanical hysteresis. Operating a coil on a steady AC voltage is a common way to test and set up a coil. In reality, the model T coil never encounters this situation. The reason for this is the timer.

In part three I will show the timer's effect on coil timing.

The Annual Meeting of the Montana Cross Country T Association - 2009:

The meeting was held in Haugan, Montana on October 11th, 2009.

The meeting was called to order by President Mike Robison at 11:00am.

Member and officers present: Mike Cuffe, Doug Langel, Mike Robison, Mark Hutchinson, Janice Hutchinson, Mike Stormo, Jackie Stormo, Nan Robison, Dave Robison, Tony Cervoski, Janet Cervoski, Susie Carnegie, Bill Mullins, Rick Carnegie, Tom Carnegie, and Jillian Robison.

The minutes were passed around (as printed in the newsletter). Corrections were noted. There was a motion to approve the minutes as corrected. It was seconded and passed.

The floor was opened to nominate two directors to fill the openings left by Doug L. and Tom C. for the one year term they were elected to last year. Doug L. was nominated and seconded. There was a motion to close the nominations and cast a unanimous ballot for Doug L. Motion passed and Doug L. is a director. Tom C. was nominated and seconded. There was a motion to close the nominations and cast a unanimous ballot for Tom C. Motion passed and Tom C. is a director. These are two year terms.

The floor was opened for rule changes.

There was a motion and a second to change rule #7 to replace the word "drafting" with the word "tailgating". Issues discussed were the fact that it is unsafe for a Model T to drive in the left hand lane in order to not draft during a pass or after being passed. The motion was amended to also include in rule #7, "Drivers must maintain a safe following distance." It was seconded and passed. The amended motion passed.

There was a motion to change rule #12 to include a sentence stating "Turn signals are optional." It was seconded and passed.

There was a motion and a second to change rule #16 to include a sentence stating "Windshield wiper of any type required." Discussion included the need to require a windshield wiper or to make it optional. The motion was amended to change the word "required" to "optional." The amendment was seconded and passed. The motion was seconded and passed.

There was a motion and a second to change rule #32 by deleting the first sentence that states "Modifications of the venturi and throat of carburetors allowed as long as the Association's .710 gauge does not pass." and adding in its place "Throat of carburetor may be smoothed as long as the Association's .710 gauge does not pass. No altering of the basic carburetor design is allowed." Issued discussed included leaving the carburetor stock

with no smoothing, how you could gauge if someone has smoothed the carburetor in 80 years, and this change makes the rules more objective. The motion passed.

There was a motion to strike from rule #33 "performing enhancing." It was seconded and passed. Discussion included monitoring issues and using pump gas only for the entire race.

There was a motion and a second to add after rule #34 a rule stating "Coil box material optional." Discussion included glue not being conductive in plywood and the fact that reproduction parts not being made of wood. Motion passed.

There was a motion and a second to add a new rule stating "Coil box must have divider in place." Discussion included precluding anyone from using a Tru-Fire Ignition System, it is stock to have it in there, and also making more rules makes more work. The motion failed.

There was a motion to add a new rule stating "Engine splash pans are optional." It was seconded and passed.

There was a motion to add a new rule stating "Hot air stove optional." It was seconded and passed.

There was a motion to add a new rule stating "Type of high speed clutch optional." It was seconded and failed.

There was a motion to change rule #38 to include a bullet point allowing the use of Timken Taper Bearings on the pinion bearing in the rear axle. It was seconded and failed.

There was a motion to change rule #38 to state that "Ruckstell rear ends must be locked in low." It was seconded and failed.

There was a motion to change rules #65 and #66 so that they do not conflict. The motion was to add to rule #66 after "until three have been found qualified." "as per rule #65." It was seconded and passed.

There was a motion to add a rule stating how the cars are to be flagged out on the second day. The motion was to flag out the cars by lottery the second day. It was seconded and discussed. The motion failed.

There was some discussion about issues from the prior year race and if rules needed to be made to address these issues. One issue was whether or not a car should have a seat riser. This was decided it was a non-issue. Another issue discussed was replacing the stock ignition switch with toggle switches. There was a motion to add a rule stating "Original ignition switch must be used." It was seconded and passed.

There was a motion to add a rule stating "The use of neoprene seals is optional." It was seconded and passed.

There was a motion to add to rule #22 a sentence stating "Radiator must be made of stock material." It was seconded. There was discussion on how to enforce this rule and the advantages to having an aluminum radiator. The vote was 6 to 6 and the president voted against the rule to break the tie. Motion failed.

There was discussion about the material that can be used for babbitting. Types of bearing were discussed, but it was decided it was a non-issue.

There was a brief intermission at 12:20pm.

The floor was opened to old business. All old business was handled during the year.

The floor was opened to new business.

Mike C. gave a congratulations to Mike R. and Jillian R. for their marriage over the summer. Also, he discussed the issues during the prior year Montana 500 event and how well the president handled them. Finally, Mike C. discussed the Montana Majestic Mountain T Tour that will be held during August 2010. For more information please visit www.montanamajesticmountainttour.com.

The route for the 2010 Montana 500 was discussed. There was a motion to have the 2010 Montana 500 run from Fairview to Lewistown on day 1, from Lewistown to Lincoln on day 2, and from Lincoln to Missoula (Bonner) on day 3. It was seconded and passed. Other discussion included a route from Fairview to Jordan, Jordan to Great Falls, and Great Falls to Missoula. Also, discussed was the idea of having a cut off date for registration so that hotels may be reserved. Mike R. will look into the host hotel at each city. It was decided to not have a registration date cutoff or a limit to the number of cars.

There was some discussion about getting new artwork for the 2010 advertising. There was a motion and a second for Mike R. to look into new artwork for the 2010 adverting costing up to $100. It was seconded and passed. Discussion included using the original artwork from the first run and making the artwork look safer than what is currently being used.

There was discussion about adding other classes such as coupes, no motions were made.

The meeting was adjourned at 1:03pm.

500Updates

By Mike Stormo

At the fall meeting while the cold winds were starting to blow, visions of a warm shop with a big fire in the stove were starting to creep into the minds of many of the race drivers.

Doug Langel says that although he is currently busy working on his house, thoughts of his race engine that he described as “laying all over his shop” go towards reassembly with an even faster car in mind. He also says that although he hadn’t planned to work on his differential due to the new rule changes he now has a pinion bearing issue, but as always with a grin on his face Doug says he’ll be ready for next years race.

While talking to Tony Cerovski, he plans for engine work on his green car to top his list. Tony figures that everything else being time tested and proven in top shape, is ready for next years race. He says that Janet’s purple car has no major issues and ran so good in last year’s race that only minor adjustments will be necessary. But this reporter after talking to Janet has discovered that she has a lot longer list, so Tony take notice - a new head gasket and a carburetor rebuild are at the top of it.

Bill Mullins after retiring has taken up a full time job rebuilding the 26 roadster that he

bought to become his new racer.
Bill has disassembled his car for a ground up transformation into the perfect 500 car. He keeps busy powder coating, plating, filing, fitting and rebuilding even the smallest parts to perfection.

Tom C. without revealing any of his race secrets (ha-ha) is busy working on his dedicated 500 racer. At last check Tom's frame was straightened, riveted and polished to near excellence. With several sub assemblies already rebuilt, it should start going together soon.

After buying a 26 pick-up, Hutch is maybe the busiest one of all. He has logged many ,many miles going back and forth trying to decide which car to race. But be assured, after the decision is made, the nuts and bolts will be flying as he has many great ideas on how he will be next year's winner.

As for this reporter and racer ,I'm trying to assemble a large pile of parts to go to the powder coater. This is becoming increasingly difficult as I cannot keep Jackie out of the car long enough to get the parts off. I'm hoping that maybe one more tour and cold weather will be enough to keep her out of it until spring. This leaves me with two deadline options--
#1 have it ready for Jackie in the spring or #2 have it ready for me in June. So, anyone want to race in the spring?

It is my hope to write an ongoing column with updates on all the race cars, so be sure to answer your phones when I call for your progress.

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