

Montana 500 Newsletter

Jul-Aug 2005

Volume 5 No. 4



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

www.montana500.org

2005 Officers and Directors:

President: Rick Carnegie

Vice President: Mark Hutchinson

Sec.-Treasurer: Janet Cerovski

Directors:

Rick Carnegie 2007

Tom Carnegie 2008

Janet Cerovski 2007

Tony Cerovski 2008

Gary Ebbert 2006

Mark Hutchinson 2007

Doug Langel 2006

Mike Robison 2006

Nan Robison 2008

Meeting Secretary: Jillian Caples

Correspondence and newsletter: Tom Carnegie

Membership dues \$10.00

Touring class: \$25.00

Endurance runner: \$35.00

Cover shot: Flag-out from Winnett, 3rd day, last leg, 2005 run. L to R Jillian Caples, Rick Carnegie - Casey Todd and B.J. Miller - Claudia and Jim Heaton in the background

Editor's Message

The fall meeting was held on November 13th in Haugan, MT. The minutes are printed later in this newsletter. George Nickol and Scott Stubbart are ineligible to be directors, so Mark Hutchinson and Mike Robison were elected to take their place. In addition, Nan Robison was elected to an open directors spot. The 2006 Montana 500 will be held out of Dillon, MT. On Thursday, after the run we are going to try to sneak into a nearby ghost town (Bannack State Park) and try to do a photo op. Bannack is one of the best preserved ghost towns. At its peak it had about 3000 people and was the first capitol of territorial Montana. There were a few minor rule changes this year. I will present them better in the next newsletter and on the web site. For now, you can read about them in the minutes.

Tom Carnegie - newsletter editor

President's Message

(this space reserved for president's message)

Place	Name	Hometown	Car No.	Total	Average speed	
1	Dennis Dakan	Maryville, MO	4	10:07:00	52.98	
2	Steve Coniff	Colorado Springs, CO	8	10:08:54	52.82	
3	Mike Robison	Spokane, WA	15	10:22:55	51.63	
4	Tom Carnegie	Spokane, WA	11	10:24:04	51.53	
5	Mark Hutchinson	Spokane, WA	3	10:32:32	50.84	
6	Ron Miller	Shandon, OH	13	10:39:45	50.27	
7	Rick Carnegie	Spokane, WA	2	10:41:09	50.16	
8	BJ Miller	Shandon, OH	18	10:50:50	49.41	
9	Doug Langel	Rudyard, MT	19	11:00:01	48.73	
10	Gary Ebbert	Port Orchard, WA	12	11:30:39	46.56	
11	Jim Heaton	Tekoa, WA	14	12:13:38	43.84	DNF Head gasket
12	Jillian Caples	Spokane, WA	16	12:38:59	42.37	
13	Garrett Green	Orange, CA	7	13:22:57	40.05	
14	Janet Cervoski	Helena, MT	17	14:39:08	36.58	
15	Stan Howe	Helena, MT	6	14:43:02	36.42	DNF Withdrew
16	Mike Wendland	Rudyard, MT	1	15:37:07	34.32	DNF Withdrew
17	Dave Warhank	Rudyard, MT	9	16:44:31	32.02	DNF Rod
18	Dave Huson	Longmont, CO	10	17:49:11	30.08	DNF Valve keeper
19	Tony Cervoski	Helena, MT	5	17:49:11	30.08	DNF Rod

A poor man's cast-iron welding furnace

by Tom Carnegie

Often in the course of events it becomes necessary to repair a cast-iron part. There are various ways to go about this. Amongst the methods I've encountered are brazing, epoxy, arc welding, metal spray, pinning and gas welding. I will give a brief description of each method mentioned along with some pros and cons.

Brazing: Cast-iron brazes fairly easily. It is suitable for repairing broken ears or small parts. If the weld required is too large or in the center, pre-heating of the part is required.

Pros: Easily done, strong, brass (bronze) has similar wear, strength and expansion properties to cast-iron.

Cons: May require pre-heat. Poor color match.

Epoxy: Simple cracks can sometimes be repaired by veeing out the crack and filling with a two-part epoxy, such as JB weld.

Pros: Easily done. Can be done cold (won't damage babbitt, or anything else due to heat).

Cons: Not terribly strong. Effected (loses strength) by heat. Poor color match. Expands at different rate from cast-iron due to heat.

Arc welding: Generally the edges of the area to be welded are beveled or vee'd out. The casting is then welded a little at a time with nickel rod. If too much is welded at once, the casting can crack. Peening the weld as it cools can help prevent cracks.

Pros: Generally easy to do. Strong. Fair color match. Can sometimes be done without pre-heat.

Cons: Patience is required to achieve decent results. Generally cannot be machined as the area where the cast-iron joins the nickel becomes very, very hard. Sometimes requires pre-heat. Fair color match.

Metal spray: The part to be repaired is pre-heated. Powdered metal is melted with a special torch and sprayed onto the part to be repaired.

Pros: Fairly strong. Fairly good color match.

Cons: Requires pre-heat. Requires specialized equipment.

Pinning: Holes are drilled and tapped into the area to be repaired. Cast-iron plugs are then screwed into the holes, generally with some sort of thread locking compound applied.

Pros: Easy and inexpensive. Fairly good color match.

Cons: Adds no real strength to the repaired area. Not suitable to hold two separate parts together. Not suitable for thin sections.

Gas welding: This is done with an oxy-acetylene torch. The area to be repaired is vee'd, then filler material is melted into the trough. The part must be pre-heated.

Pros: Excellent color match. Easily machined. Nearly as strong as the original part.

Cons: Difficult to do. Requires specialized equipment. Requires pre-heat.

It is this last method that I will deal with in this article.

Equipment and materials:

Furnace: A furnace can be made with fire bricks. Fire bricks generally are 4 ½ by 2 ½ by 9 inches. You can calculate how many bricks are needed by the size of the part to be welded. The furnace that I made to weld a Model T head required twenty-nine bricks.

Charcoal briquettes: This is our heat source.

Oxy-acetylene torch.

Cast-iron welding rod. This rod is available from many welding supply houses. It is nearly pure cast-iron.

Flux: Special flux for welding cast-iron, also from your welding supply place.

Jig: Needed to hold the part to be welded off of the coal bed.

Gloves: Good heat resistant ones.

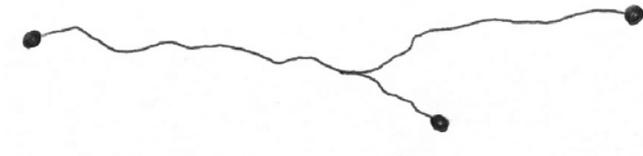
Tinted face shield: To keep your nose from getting burned.

The procedure

The first thing to do is to prepare the part to be

welded. Clean the area where the part is to be welded. I use a sandblaster, but a sander would probably work as well. Determine where the ends of the cracks are, if that is the kind of repair that you are making. “Stop-drill” the ends of the cracks.

Vee the crack out all the way to the holes. I use a carbide bur on a high-speed grinder. If the part is to be butt-welded, ta-

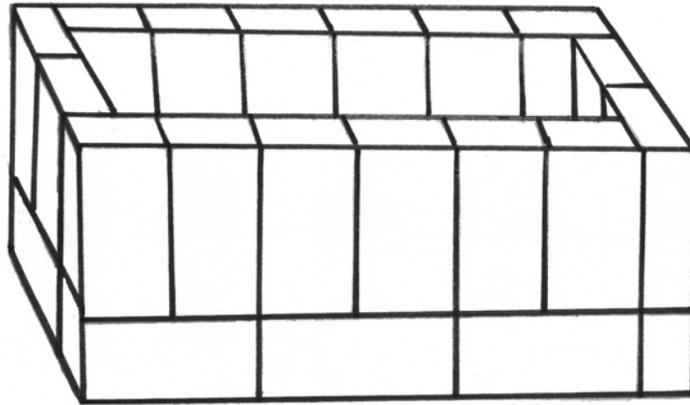


per both parts to be butted.

The next step is to build your furnace. Stack the bricks on a good, hard, steady, fireproof surface. The process can make a lot of odor, so you may want to do it outside. Be careful of combustibles, because you are playing with fire. Make your furnace cavity as small as you can and still comfortably fit the part to be welded into it.

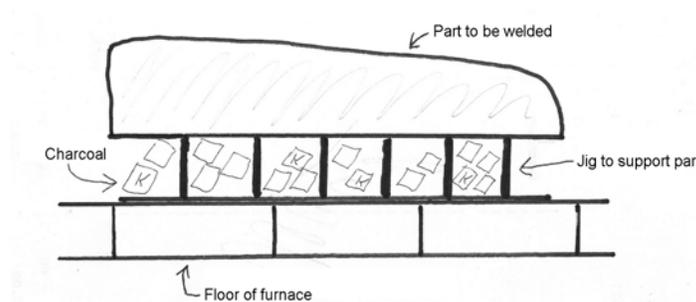
I usually tie a rope around the bricks to help stabilize them. Into the bottom of the

furnace place something to support the part to be welded. It should raise the part a cou-



ple of inches to give room for a good bed of coals.

Fill the furnace to the top of the jig with charcoal. Ignite the charcoal and let it burn until you have a good bed of coals. Place the part to be welded into the furnace. You may add more charcoal if needed. Allow



the part to heat for a few hours. If you place a piece of paper onto the head and it quickly chars, the part should be hot enough.

Now comes the tricky part. Welding cast-iron is a different sort of thing from other types of welding. If you want to practice to get a feel for it, you can try to weld two pieces of brass together with brazing rod. Heat the filler rod and dip it into the flux. Just a light coating is all that is needed. Simultaneously heat the part and the rod and work the rod into the vee as the metal becomes molten. One of the problems that you will encounter is that the base metal melts at nearly the same temperature as the filler rod. This can cause the whole system to “collapse” if you are not careful. The other main problem that you will probably encounter is gas bubbles. I use a strong light to see these bubbles and continue to “work” the area until they are gone. You can

also come back and put another layer of weld on top of problem areas. As you work you'll likely find that your hands get very hot. I try to hold the torch and rod beyond the edge of the furnace as much as possible. Also, as mentioned earlier, you can burn your face if you don't wear a full mask.

When you have completed the weld, immediately fill the furnace full to the top with kitty litter. This will put out the coals and start the cooling process. Let the part cool overnight. If the part cracks, not enough pre-heat was used. If the part has hard spots, it has cooled too quickly. If the procedure is done correctly you will have a weld that is virtually indistinguishable from the base metal and is eminently machineable.

Annual Fall Meeting of the MCCTA
November 13th, 2005

- The meeting was called to order at 11:15am by President Rick Carnegie.
- The minutes from the 2004 meeting were handed out and read by all. There was a motion to approve minutes as written. It was seconded and passed pending a few spelling errors be changed. Janet Cerovski handed out the Treasurer's Report. The balance as of November 13, 2005 is \$3,819.14.
- President Rick C. stated we needed a new Vice President because Scott Stubbert moved away and a new director to fill George Nickol's place because he didn't pay his MTFCA dues. Nominations for Vice President were Mike Robison (who declined), Gary Ebbert, and Mark Hutchinson. There was a motion to close the nominations which was seconded. A vote by ballot revealed Mark Hutchinson as the new Vice President. A director to fill George Nickol's position would take over his time and not receive a full term. Nominations were opened for this position. Mike Robison was nominated and seconded. There was a motion to close nominations and cast a unanimous ballot for Mike Robison. It was seconded and passed.
- There were three director positions that were now vacated and need to be filled. For Tom Carnegie's Director position, Tom Carnegie was nominated and seconded. There was a motion to close nominations and cast a unanimous ballot for Tom Carnegie. It was seconded and passed. For Mark Hutchinson's Director position, Nan Robison was nominated and seconded. There was a motion to close nominations and cast a unanimous ballot for Nan Robison. It was seconded and passed. For Tony Cerovski's Director position, Tony Cerovski was nominated and seconded. Jillian Caples was also nominated and seconded. There was a motion to close nominations. It was seconded and passed. A vote by ballot revealed that Tony Cerovski will assume the Director position.
- Nominations for Meeting Secretary were opened. Jillian Caples was nominated and seconded. There was a motion to close nominations and cast a unanimous ballot for Jillian Caples. It was seconded and passed.
- A list of the Current Directors is as follows:

-Route for 2006:

Office	Name	Officer Term	Director Term Expires
President-Director	Rick Carnegie	2005-2006	2007
Vice President-Director	Mark Hutchinson	2005-2006	2007
Treasurer-Director	Janet Cerovski	2005-2006	2007
Director	Mike Robison		2006
Director	Doug Langel		2006
Director	Gary Ebbert		2006
Director	Tom Carnegie		2008
Director	Nan Robison		2008
Director	Tony Cerovski		2008

Three ideas were presented for the 2006 Route. Tom Carnegie presented a route out of Thompson Falls. Day one would be toward Missoula, day two would travel toward Eureka, and day three would be an up and back to Thompson Pass. Gary Ebbert suggested Great Falls, but had no route planned yet. Tony Cerovski presented a route out of Dillon. Day one is to go west toward Idaho, day two is to head towards Butte and Boulder, and day three is toward Menida. The optional tour day would be to Bannack, a ghost town. There was a call to vote and Dillon was passed as the place for next year's Endurance Run.

-New Business:

-There was a motion to hold the fall meeting the second Sunday in October at 11:00am, place to be decided by the president, every year. It was seconded and passed.

-There was a proposal to allow Ed Marshall to move the placement of the brake/clutch control arm to the outside of the body. This is to create clearance for his leg brace.

There was a motion to allow placement of the brake/clutch control arm to the outside of the body of the car. It was seconded. There was a motion to amend the motion and a second. The new motion now makes this a one-time exception as a vote by the board of directors that will need to be approved each year. The amendment was passed.

-There was a motion to set the date of the 2006 Montana 500 Endurance Run to June 18th (inspection day) through the 21st, and having a tour day on the 22nd. It was seconded and passed.

-There was a motion to not allow performance enhancing fuel additives. Car must use straight automotive pump gas as a fuel during the race time, starting with the inspection and continuing until the end of the race. It was seconded and passed.

-There was a motion to change rule #63 to: Disabled cars will receive slow time for each leg not completed plus a daily penalty of one hour. It was seconded and passed.

-There was a motion to add a new rule after rule #32, Rule #33: Modifications of venturi and throat of carburetors allowed as long as the Association's .710 gauge does not pass. Carburetor must be complete including all butterflies, adjusting needle, and stock spray nozzle. Butterflies must be original size. It was seconded and passed.

-There was a motion to amend rule #23 to not include a size . . . oiling system, one outside oil line allowed. Transmission

oil screen allowed. It was seconded and passed.

- There was a motion to add, "no modifications of the inside oil system." It was seconded and passed.
- There was a motion to add, "Chassis parts may be assembled from any year T parts." It was seconded and passed.
- There was a motion to add, "Tops of open cars, use of muffler, and fans are optional. It was seconded and passed.
- There was a proposal brought forth to create a gauge to measure the port under the valve. It was discussed.
- There was a short bathroom break.
- There was a motion to have a gauge to measure the port under the valve. It was seconded and passed.
- There was a motion to implement the rule just made above for the 2007 race and the size will be decided at the next general meeting. It was passed and seconded.
- There was a motion to allow no grinding or performance enhancing alterations of the intake and exhaust ports. It was seconded and passed.
- There was a motion to change "or" to "and/or" in rule #11. It was seconded and passed.
- There was a motion to have the president select a committee to look into converting the old 16mm footage of the Montana 500 to DVD and present it to the directors and get it done. It was seconded and passed.
- Tom spoke about the Lewistown Race and how fun it was.
- The newsletter will feature a "where are they now?" section about old race cars and where they are.
- Meeting was adjourned at 1:30pm.

The Following Members Attended:

- Rick Carnegie
- Tom & Susie Carnegie
- Nan & Dave Robison
- Mike Robison
- Doug Langel
- Tony & Janet Cerovski
- Lee Burgess
- Ed Marshall
- Gene Kicha
- Mark Hutchinson
- Kathleen & Gary Ebbert
- Jillian Caples