

**BMW Car Club
of America
North Star Chapter**



North Star Bavarian March, 2016



The BMW M Coupe shown was modified and built exclusively at BMW of Minnetonka.



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On The Cover



March, 2016 .

This issue of the North Star bavarian news letter's cover is garnished with some very tasteful 1 series fall goodness. This photo was an arbitrary selection of mine from a group of friends on Facebook when prompted for a cover photo. Criteria were simply that it must be a BMW, and it must be an vertical aspect phot. This, one of three images I received that actually fit those criteria seemed the most fitting as we shake the winter blues of 2015's relatively mild El Niño winter.

Photo credit: Charles Miller, esq.

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Upcoming Club Events

Karting Event

March 12, 2016

check out MotorsportReg for the details!

Adult Adv. Car Control Clinic at DCTC

Saturday, April 17, 2016 8:30 am - 5:00 pm

1300 145th St E, Rosemount, MN 55068

BMW North Star Club M Day (full)

April 16, 2016

check out MotorsportReg for the next event details!

BMW HPDE at BIR

Week-end of June 3rd, 4th, 5th.

5523 Birchdale Rd, Brainerd, MN 56401

New Member Picnic

Saturday, July 16, 2016 11:00 am

200 Brookview Pkwy, Golden Valley MN 55426

AutoLieben 2nd annual Car Show

Sunday, July 31, 2016 Time TBD

Afton Alps

Tire Rack Teen Street Survival

Saturday, August 6th, 2016 8:30 am

1300 145th St E, Rosemount, MN 55068

Bimmers 'n' Brats 2016

Sunday, September 11th, 2016 Time TBD

301 Summit Ave, St Paul, MN 55102

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Laguna Seca New Years

December 31st 2012 would be North Loop Motorsports 4th trip to the famous Laguna Seca Raceway. It is the home of the Corkscrew, a blind 59-foot drop also known as “turn 8”. What do I mean by 59-foot blind drop? Come over the blind crest just after turn 7 and get hard on the brakes. Make a sharp left into the corkscrew... at this point you cannot see the track, you can only see a lonely tree that you aim at until the bottom falls out of the turn! Now you can see the track in front of you, as well as a concrete wall you are speeding towards! Next, the track makes a hard right. If you didn't cut in too much and go through the sand or get all sorts of sideways as you slide towards that wall, you have made it through! Of course there is more to Laguna than it famous turn 8. Eleven turns with a total of 180ft of elevation change, basically it looks like they whittled a track into the side of a mountain.

This was my 4th trip to Laguna, it still feels funny typing that out. I'm still pinching myself after even going once (we have actually gone five more times since, so the count is now up to 9). So there I was, about to start a 7.5 hour endurance race strapped into the driver's seat on pit road of our mighty NLM4 race car. Months of prepping the car, coordinating shipping, plane flights, fitting our entire pit setup into our luggage and convincing Delta that our fuel jugs are not some sort of bomb, had all come down to firing up the M20 engine on pit road.

I pulled onto the track and ran three laps under caution until they threw the green. During those three laps, you get a chance to check out the track at $\frac{3}{4}$ race speed. I remember looking at the run off on the inside of turn 5 and thinking that looks much more treacherous than I remember. A few

moments later, I hear Tom the team owner over the radio “GREEN GREEN GREEN!” Our steady $\frac{3}{4}$ pace had turned into wide-open throttle, making the turns come up quicker and the braking zones appear to shrink. As your body adjusts to race pace, the scenery at first seems to be moving at an alarming pace. The first few laps are a bit nerve racking as everything moves so fast. Then a strange thing happens as you go faster. It no longer feels overwhelming; it feels like your mind slows down time. Turn 4 for example, in our cars you can go flat out even though in the first few laps you had to wait for the tires to heat up.

It feels a little sketchy going through there but as you adrenalin kicks in it becomes second nature...get all the way to the left fix your eyes on the turn in, lift for a split second, now ease into the throttle and turn in, focus your eyes on the apex at the same time look through the apex to track out as you approach the apex, put the throttle all the way to the floor. As you do so the car drifts out to where your eyes were on the track out point, the steering wheel hasn't moved since you set it at turn in if you did it right. Be ready for a possible counter steer if the back end steps out! When executed correctly it feels like heaven, the car is pivoting around you and you aren't even moving the steering wheel. In real time that took about 4 seconds traveling at 80 mph. That is 198 words of thought in a 4 second window, being in that moment is an amazing thing to experience what humans capable of.



Back to the race, as I approached the front straight I came upon a lesser-powered car and roared by him as we approached the slight bend of turn 1. It's a very satisfying feeling of passing another car down a straight with the exhaust from the engine you personally built screaming off the infield wall. On this day our M20 was very mighty, letting everyone know its days of simple civilian life have passed. No longer does it chug along to the grocery store and wait for you to decide if you should buy the normal cream cheese or pick the latest low fat organic taste like the real thing version. Oh no, its days of waiting are done now; all of its thoughts are consumed with dominating whatever car is in front of it and shout at the top of its lungs as at it as it passes "I am M20 hear me roar". It's fed up with waiting; the rest of its days will be spent terrorizing the competition.



Two laps later I had settled into a pace with the line on my mind - turn in, apex and track out -getting a rhythm down. Then it happened as I went through turn 5. All seemed normal driving my preferred line. That was until I touched the outside rumble strip with my right rear wheel. What I didn't know going into that turn is that there was still dew on that rumble strip from the night before. It might as well have been ice! Immediately the car snapped around without warning and no chance of catching it. I did a 180 and slid sideways into the inside of the turn. Remember a few laps before when I mentioned the inside of T5 looking much more sketchy then I remember? I was now sliding sideways and backwards across the track heading towards a drainage curb. Before I knew it, I hit it square with both right side wheels and went airborne spinning another 90 degrees in the air and landing perpendicular to the track in the sand pit.

First thing I thought was to get back on the track. I put it in first gear and tried to go forward, nothing. Tried reverse, nothing. I messed with it a few times then realized something was broken. At that moment I thought of a few other things, like mostly 4 letter words. I got on the radio and told Tom I f**ed up. I had crashed and something was broken in the right front, a control arm or a tie rod. I waited for the tow truck and they dragged me out of the sand trap, they informed me that 3 out of 4 tires are flat so it would be a rough ride back to the pits. I thought a lot of things during that tow in, I had just crashed on the 3rd lap and there where three people behind me waiting to drive, two of whom had rented a seat from us for the first time.

had rented a seat from us for the first time. My thoughts were interrupted by Tom telling me he had sourced some parts from another team already and to hop out and fix it when it got to the pits. I got out and dove under the car. I had broken the tie rod, along with folding over 2 rims and knocking a 3rd tire off the rim. We went to work and for the next 25 min replaced the tie rod, replaced 3 rims and did an alignment using Tom's eye balls as the alignment machine! We fixed the car in the allotted 30 min and were back on the track. I was relieved to see the car back out but at the same time was not sure if anything else was damaged on the car. I was relieved when that driver started clicking off lap times that matched our previous best lap times from the year before. The next two driving stints by our new renters went off without a hitch and we continued to climb through the field working our way into the top 20.

It was now time for Tom to go in, as he started clicking off laps he radioed in and said the cars was poorly handling this could mean two things the tires had "fallen off" losing there "stick" or the car was messed up from the crash and the renters were used to driving poor handling cars thinking it was normal. I dismissed the second reason due to their quick lap times. Tom did what he does best - drive a poor handling car to its limit and worked us up to 10th place! We were ecstatic! As sun and clouds had moved, the atmospheric pressure changed causing the noise from our exhaust to get louder.

Laguna Seca New Years (Continued)



We were now over the tracks 92db limit and were black flagged. I had some screen door repair and steel wool just in case this happened. I stuffed the steel wool in and clamped the screen over the pipe. We made it two laps and the screen melted (apparently the new stuff is plastic instead of good old steel mesh) blowing the steel wool out. I doubled up on the steel wool and screen but it failed again.

One more attempt also failed by making too much back pressure blowing out an exhaust gasket further upstream on the exhaust. Finally I took a sheet metal panel off the car and bent/drilled/cut into a deflector. That, along with Tom short shifting past the sound booth meant that we stopped getting black flagged.

As Tom's driving stint came to an end, he came up with a strategy to skip fuel since we had done so many pits stops. We would then just do a driver change saving approximately 4 minutes of pit time or two laps. I jumped in the car with an hour and 20 min left in the race. NLM4 was currently in 13th place. I quickly realized Tom was right - the car wanted to drift every turn - sketchy would be a nice way of saying it.

Tom's strategy to skip fuel paid off. With 20 min left in the race he said over the radio "You're in 9th place, as long as you don't f**k it up, we are good till the end." We had a 28 second gap in front of 10th place. Just as I was starting to feel good I looked down and saw the fuel gauge was on empty. I started to conserve fuel while Tom monitored the gap to 10th place. At the 10 min mark, I started leaving the car in 4th the whole way around to conserve fuel and keep my corner speed up as much as possible.

As expected, the 28-second gap started to fall, the 10th place car was coming for me. As I started up the hill I shifted into

3rd, no luck it didn't have enough fuel to pull 3rd. 4th is what I had to work with. I used all of the track and when

I got to the top of the corkscrew I would push the clutch in and coast all the way down the back section not braking though T9 or 10. I made to the last lap and just thought if I make it to the top of the corkscrew I can coast down to turn

11. Will I have enough fuel left to pull down the straight and stay ahead of the 10th place car? The car pulled all the way to the corkscrew. One last time I pushed the clutch in,

an eerie quiet came over the car as the engine dropped to an idle; the noise of the tires on the pavement and the small pebbles being thrown off the car into the wheel wells was all I could hear beyond heart was pounding. I made it to T11,

turned in and left the clutch out...Pop-pop-n-vroom-M20-4life... the little motor squeezed a few more British Thermal

Units out of the last drop of fuel and screamed across the finish line in 9th place! What a feeling!

I remember with 12 min to go I told Tom I was going to finish 9th or run out of fuel. Being in that moment is an incredible feeling. Everything else falls away, it didn't matter that I puked my brains out the night before my flight, that I had gotten up at 5am that day, that the e30 I was driving had an e36 tie rod, or that I had failed Spanish 2 in 10th grade. The only thing that mattered was that I get the car across the finish line before the guy behind me without running out of fuel. To me this is life in its simplest form.

One thing I do know for sure - there is no way Prius owners have this much fun saving fuel!

2016 North Star Chapter Winter Dinner Recap

It may have been -15 degrees outside, but that didn't stop nearly ninety North Star members and guests from attending the annual Winter Dinner at the Gasthaus Bavarian Hunter.

After a wonderful buffet dinner of German specialties, we were treated to a presentation by Mike Renner from the BMW Performance Driving School in Spartanburg, South Carolina. Mike captivated the audience with stories from his racing career and as a driving instructor, and provided overviews of the Performance Driving Centers in Spartanburg and Thermal, California. The video clips of Mike driving were a big hit with the audience, especially the slow motion video of Mike drifting around the Circuit of the Americas at 110 mph in an M6!!



This year, the North Star Chapter sponsored a food drive to benefit Second Harvest Heartland. Thanks to the members and guests who made donations, we were able to deliver 266 pounds of food and \$90 in cash. This translates into 492 meals for those less fortunate in the Twin Cities area. Thank you to those who participated in this first ever club sponsored food drive.

We hope to see you all next year at the 2017 Winter Dinner currently scheduled for Saturday, January 14, 2017.



Project : 'That old M3' part III

Words and photos by Erik Berger



Not just for looks -- the S54B32 powerplant now actually motivates this old chariot of the Gods forwards and backwards! Last week-end, this el niño winter graced us with a record breaking 60-degree day, a day which I took notice of on the forecast. I had just a few small items left between the car not going on a test drive and going on a test drive, so I hopped in my little grey fiat 500 (the daily) and set the cruise for my 37 mile trip to the M3 in Stillwater to finish up, or at least put in place just far enough the cooling system so I could drive the car up and down the block.

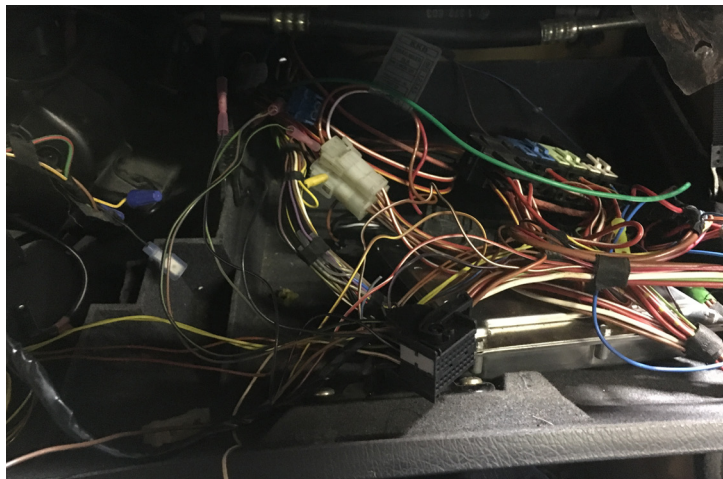
Cooling an S54 isn't really all that different from the S52 that was in the car before or even the S14B23 that was in the car from the factory, but the way I have this car set up is the E36 M3 radiator, the original E30 M3 expansion bottle, and of course, that S54 E46 M3 engine up front. This setup works very well and is appropriately sized but the overflow capillary tube is on the wrong side of the radiator for the original M3 bottle. Solving this 5-foot coolant run was a bit daunting, but I was able to procure an original S14 capillary tube and joined that to some thin wall aluminum hobby tubing for the remainder of the run to the radiator nipple.

After completely filling the overflow expansion tank with coolant, I noticed that I was short 5 small 10mm hose clamps. No matter how hard you try and make lists, you will always forget parts on a project like this. Luckily, this wasn't my only car in Stillwater so I ran downstairs to where the Mercedes is (my 1976 240D with the 89 560SI heart transplant) and found 5 hose clamps on the 350SE D-Jetronic fuel injection hardware I purchased a decade ago for that project but never used!

Winding the worm gear clamps closed on the new old stock capillary tube, I eye over the engine bay to see if there are any additional glaring omissions before I take this proud and noble steed for its maiden voyage -- coming up dry on must have not taken care of, I hop in the car, turn the key, bringing the S54 to life instantaneously -- hard over to the left in to reverse, slowly easing that new Sachs clutch kit into motion, I open the garage door and pull the car outside.

Getting out of the car for the first time outdoors since some time in December, I look back at the image you see on page 8. an immaculately clean, iconic and beautiful shape. A shape that is now proudly backed and justified by well over 300-hp rumbling through my scratch-built exhaust and polished magnaflow muffler.

Getting back in to the car, I realized that the blower motor had finally bit the dust last fall and that you really don't have any heat until you're moving. Luckily I had the dash gauge working properly and the engine was well within operating temp. Clutched in, pushed the selector in to 1st gear and off we go. The first few shifts are crisp and reassuring -- the engine is pulling strong low down and the relatively small 2.5" piping gives the engine a more classic inline 6 noise with less 'boom'. Pulling on to the main road, I wind out second gear to about 5,000 rpm only to have the



engine computer come down on me like an anvil in to limp mode. I pop the car in 5th and drive to the next street, key off, fire back up and drive back to the garage with no odd performance issues.

Pictured above is the glove box of this M3. the in-board wiring and MSS54 Siemens ECU for the car -- I attribute the limp mode to oxygen sensors not being connected at the time, and a poor chassis ground to the shock tower.

The M3 is back resting in the garage until the next warm day we are graced with, but the last few niggling issues have hopefully been sorted and the car will truly be ready for a test drive... Even if I can't rev it out due to new rod bearings in the bottom end!



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You have four months to take action if you want to continue receiving the paper copy of your news letter. Even after that, you can follow these instructions to change your preference.

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- 4.) Click Email Preferences and Demographics
- 5.) Click Email under 'Receive Chapter Newsletter Via:'
- 6.) Click Update.

That's it! Remember, **you can change this at any time.**

Polar Run 2016

Words and photos by Erik Berger

Just before the end of January, I took part in a small little-known winter road rally to benefit the Ronald McDonald house called the Polar run in my 1988 BMW 325iX 5 speed turbo with two friends and 50 other teams. The car had been extremely problematic the month prior to the departure, blowing 4 head gaskets and 2 cylinder heads. Mercifully, #5 head gasket and #3 cylinder head decided to hold! The rally launched in Anoka and used all back roads via checkpoints to the Lutsen destination. On the route, we encountered sheet ice roads, many police, unplowed logging roads and some truly incredible vistas through the hazy dirty and aged 270,000 mile glass of this old E30 BMW



Although we did not win with the 'Hoonicorn' as I had dubbed it, we did improve more than any other team, starting in 37th and finishing 3rd over all.

Following a night of relaxation, friends and food, we stopped in Grand Marais for some breakfast at 'south of the border cafe' and headed home.

This old car lived a full lifetime of events in just two short days, but I no longer resent it for grenading cylinder heads, no, I'm actually quite fond of it for getting us to and from the most remote and poorly maintained roads I have ever experienced.

1988 BMW E30 325iX T04E turbo, 440cc injectors, Megasquirt management. General Altimax snow tires, shimmed transfer case. original clutch and bottom end @12psi!



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