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of America  
North Star Chapter



North Star Bavarian  
June, 2016



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## On The Cover



June, 2016 .

This issue of the North Star bavarian news letter's cover was sloppily plastered over with a potato cellphone picture taken by yours truly during a car wash.

this is the 'other' E30 M3 that occasionally gets out on the town.

If you would like to see your car or BMW content on the cover of the next newsletter, feel free to email submission requests to [editor@northstarbmw.org](mailto:editor@northstarbmw.org)!

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**Deadlines for next full newsletter:**  
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or contact [editor@northstarbmw.org](mailto:editor@northstarbmw.org)

**Typical Publication Dates:**  
3/1, 6/1, 9/1, 12/1

## Upcoming Club Events

Member Appreciation 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

Apple Harvest Express  
10:00 am

Open Lapping day at BIR  
Saturday, October 8th, 2016  
Brainerd International Raceway, Brainerd, MN

BMW M Performance School North Star Day  
October 15th, 2016  
Greenville, SC -- see Motorsportreg for details!

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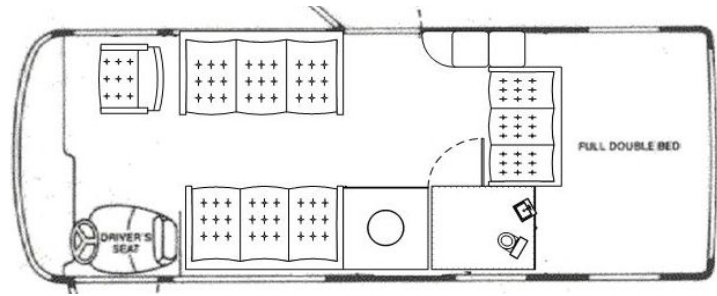


# Project Vixen

Words and Photos by Craig Lovold

I promise this story has some BMW content, so please bear with me. About two years ago I picked up another project vehicle that has fascinated me for a while, a 1988 Vixen 21 XC.

A little history may be in order, since these aren't well known. The Vixen Motor Company was founded by Bill Collins, one of the founders of the DeLorean Motor Company. The basic idea was to create a sleek, fuel-efficient RV that could fit in a normal garage. It's 21 feet long, under 7 feet tall, and has a drag coefficient of 0.295. For comparison, the Corvette C6 (2005-2013) has a drag coefficient of 0.34. The Vixen got 30 MPG on the highway thanks to a rear mounted BMW turbo diesel, the M21 used in the BMW 524TD, and 5 speed manual transmission. The transmission is the same Renault transaxle that was used in the DeLorean DMC-12. The first model, the 21 TD, has a pop-up roof section for additional headroom. It has a wide stance and it's molded fiberglass body over a steel frame give it a low center of gravity. Because of this it has been referred to as "Driver's RV." It looks a bit like a Disney Monorail that has jumped the tracks. Because the engine is in the rear it is considered a class A motorhome, like the big boys. And since it has a diesel engine I like to tell people I have a diesel pusher. They came with two large coach batteries and a power inverter to run 110 volt AC appliances like the standard microwave and refrigerator. Between 1986 and 1989 approximately 587 Vixen 21 motorhomes were built, and of those 39 were the XC model that I have. The XC was sold as executive transportation, the grand touring

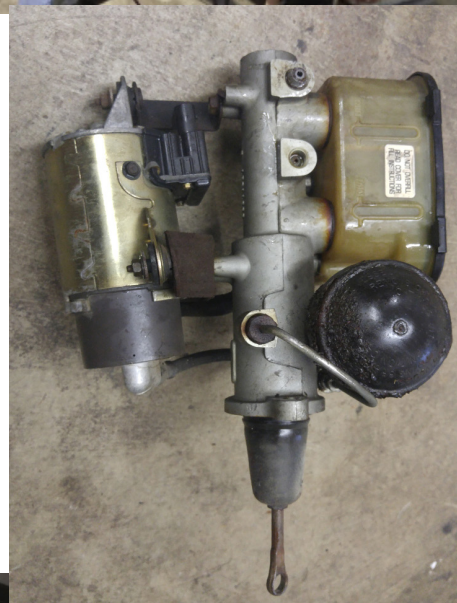


model. The XC has a fixed roof, wet bar, more seating, no stovetop, and a smaller bathroom with no sink or shower in it. It still has the fixed bed in back over the engine, and the front bench seats can fold together to make another bed. I like the open layout of the XC, and when we travel we tend to eat out and stay at places that have a shower, so this floor plan works for us.

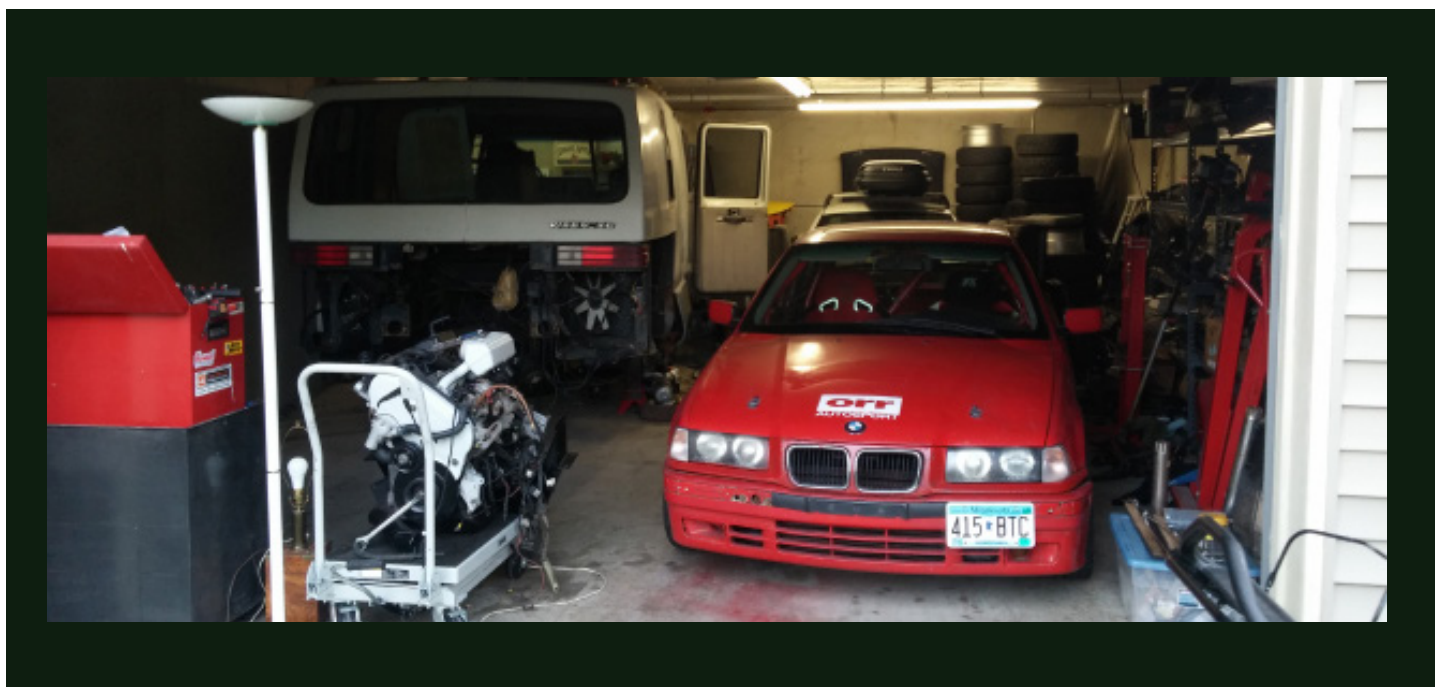
I ran across this Vixen for sale locally. It had been brought up from Florida a few years before and restored to (some-what) running condition. It had been neglected badly and the seller had torn out the entire interior due to moldy carpet and other water damage from a leaky roof. Because I'm cheap and maybe a bit careless I decided to drive it the 30 miles home. I brought water with because I was told it tended to overheat. I also discovered that the original electric/hydraulic brake system was a bit flakey. There was a 1-5 second delay between when you hit the brakes and they actually engaged. Doesn't that sound like fun? So, every few miles the engine would start to run hot and we would have to stop, let it cool down a bit and add a bunch of coolant, all while staying far back from other vehicles because of the unknown amount of time it would take to get any usable brakes when needed. Oh, did I mention it leaked fuel like crazy? At least that only happened when the engine was cold.



After getting it home I decided to make this a longer term project and take it slowly. The engine made some knocking noises that concerned me, but I've never owned a diesel so I wasn't sure if they were abnormal, but they didn't sound good to me. I eventually decided to just do a complete engine rebuild to make sure it would be safe and reliable. Do you see where this is headed yet? So, I careened the Vixen down the hill into our lower garage and put it up on stands to drop the engine. It didn't get back on the floor for well over a year. Over the first winter I tore down the engine. My biggest concern was the head and the crankshaft. The head turned out to be ok, and so it got a full valve job and resurfacing. The crankshaft also turned out to be ok, with no damaged bearings or anything. It turned out that the engine was in great shape internally, so it probably didn't need a complete rebuild, but I never would have fully trusted it unless I saw it myself. So the engine got new bearings, rings, seals and everything else. As usual, I went overboard and had the injectors rebuilt, turbo rebuilt, replaced all the glow plugs, the starter, all the hoses and belts, water pump, put new seals in the injector pump and generally replaced everything. Then I went and powder coated the intake manifold and a bunch of other parts that no one will ever see.



## Vixen project (Continued)



Then the escalation continued. If we want this to be reliable I might as well do everything I can while I have the engine out anyway. I sent all the clutch parts out to be rebuilt because they aren't really available any more and replaced the entire clutch hydraulic system. I had the drive axles rebuilt, put in new wheel bearings, shocks, and transmission seals. There is a very active community of very helpful Vixen owners that gave me lots of good parts sources and ideas to improve the Vixen. Then I tackled the brakes. I decided to ditch the GM Powermaster electro-hydraulic system with a more conventional vacuum system. That, of course, escalated into replacing most of the brake hard lines, rear brake cylinders, and flushing the system to switch to DOT5 fluid. I found another Vixen guru who had devised a replacement for the notoriously flakey speedometer sending unit, so that had to be rewired. I added an Exhaust Gas Temperature (EGT) sensor with an alarm-equipped gauge to protect freshly rebuilt turbo (and engine).

Last summer I started to think about the interior. The previous owner gutted the interior and threw everything out, so I didn't have anything to use as a template for the remodeling. He left one of the bench seats, but threw the other out. Both bench seats are needed to fold across the middle to form the second bed, so that was troubling. Remember that the only made 39 XCs, so finding a replacement didn't seem realistic. But then, Vixen Owners Association to the rescue. I actually stumbled upon a Vixen owner who had a wrecked XC that he

was willing to part out. The interior was in bad shape, but at least it was complete, and he had the seat I needed! On top of that, it still has the molded plastic wall panels that are highly coveted by Vixen owners because they are somewhat fragile. What luck! He was in FLorida so I knew shipping would be expensive, but then he offered to drive them up on his next trip if I didn't mind waiting. It was a great day when a Vixen showed up in my driveway, towing a trailer full of Vixen parts.

I've been collecting interior amenities, but I'm waiting until it is running properly before I start that phase. I've got bigger coach batteries, a portable air conditioner to eventually build in to the cabinets, a very large inverter/charger to run everything, 24" flip-down monitor, Blu-Ray, surround sound system, microwave, mini-fridge, portable generator, and a few other goodies ready to go in.

I found it interesting that the Vixen is comprised of a lot of parts from other vehicles of the era. It makes sense in a low-production vehicle and makes it a lot easier to find replacement parts. The clutch master is Ford and the clutch slave is DeLorean, the tail lights are Pontiac T1000, the brakes are GM, and the list goes on and on. It's great that the Vixen Owners Association keeps a list of all the replacement parts!

As of right now I have the Vixen back on the ground, with just a few wiring and cooling system tasks to finish before I test fire the engine. With any luck we will be able to at least drive it around a bit this summer, even if the interior is gutted. Maybe next year we can start the interior renovation.



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# Project : 'That old M3' part IV

Words and photos by Erik Berger

Up and running, for real this time. Since last publishing, the M3 is finally permanently out of ECU limp mode! S54 power running through a non overdrive box with 3.73 gears in the rear makes for an absolutely terrifyi--- er--- exhilarating drivers car. If you manage to row the gears fast enough, this car will burn through the first three gears before you have any idea what has even happened, even after swapping to the stickier but narrower 15-inch factory wheels with Direzza 102s.

After re-connecting the pre-cat oxygen sensors, the car was still kicking hard in to limp mode on every test drive. Frustrating though that may have been, this ECU has a magical thing called OBD2 built in to it given the donor was post 1995 production. Splicing ground, power and K line in to a parts car donated OBD2 port, I fired up my INPA BMW diagnostic computer and found out within minutes that the ECU was seeing implausible values from both cam sensors. Odd, I thought since this was a brand new engine harness and I was fairly sure I had connected every last wire in that lovely glove box. Keying on the ignition and taking the multi meter to the ground pin and the 12V switched ignition power from the exhaust side HALL-Effect camshaft phase sensor, I found that there was indeed a problem. .73VDC where I should have seen 12VDC. Splicing in a power feed from the power distribution block on the main engine harness, the car fires right up and I notice something this car had never experienced before... Throttle response! Eagerly tossing tools to the ground and opening the garage door, I take the car out to see if that was all it was to get the car out of limp mode. Boy was it ever. Being a relatively damp day on fresh tires with new found power, the car immediately got sideways pulling out of the driveway in second gear. Huge smile on my face, I continued gingerly warming up the oil on the cold blooded beast that is an S54 (which, mind you had fresh VAC coated rod bearings that at this point had



done fewer than 5 miles). Rolling in to that floor-mounted throttle potentiometer in fifth gear, the engine snarls its throaty intake honk and presses my dirty low rent work tee shirt deeper in to the quarter million mile old german cow hide. Immediately, I rue the fact the engine has new rod bearings and must be kept below 4,000 rpm for the first thousand street miles. Winding up and down the box over and over between 1,000 and 4,000rpm, basking in yet another successful S54 swap, I return back to the garage, park the car on the lift and head home to plan the next 990 street miles in the fewest possible days.

Daily driving such a monster really isn't all that intimidating with the well worn factory suspension and 15" wheels -- driving down the highway, there's no hint of the swap being anything other than factory installed.. That is, until someone pulls up next to you on the highway and wants to do some business. Around the typical driving cycle, even with some hooligan action, this car still somehow manages to return 21mpg consistently, more than can be said for my 2002 E46 M3 convertible which struggles to return 19 on the same type of driving cycle. Who said light cars weren't the future?!

The 990 break in miles went by slowly, but quickly given the amount of time in which they were covered -- the Liqui-Moly® 10W60 oil looked as crisp and gold coming out of the E34 525 oil sump as it did



going in earlier that month with the heart transplant -- Oil filter showed no shavings or particulate either! Pending the blackstone oil analysis results, I'd give this reborn engine a clean bill of health.

Here's to the upcoming car season and joyous drives in this car to pay off those late nights, frustrating problems and absurd expenditures!

Till' the next time!

Watch the ongoing saga:  
[youtube.com](https://www.youtube.com/user/camper1234599)  
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The North Star chapter of the BMW Car Club of America wants to keep you aware of activities offered by your club. We also enjoy presenting articles written by members. Whether in Electronic, or paper form, we will continue this service to you.

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.

- 1.) Go to [www.BMWCCA.org](http://www.BMWCCA.org)
- 2.) Click Login, enter your user i.d. and password.
- 3.) Click 'Manage Account'
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- 5.) Click Email under 'Receive Chapter Newsletter Via:'
- 6.) Click Update.

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

# Mississippi River Trek

Mississippi River Trek and Amana Colonies 3-Day Adventure

Friday, September 23 - Sunday, September 25, 2016

The Great River Road is calling! We'll depart the Twin Cities late morning on Friday en route to Marquette, Iowa where we'll stay the night. On the way we'll explore the small towns and back roads that make up the river valley. Dinner will be at a classic supper club in Prairie du Chien, Wisconsin.

On Saturday we'll head to the Amana Colonies in Iowa. These seven German villages are recognized as National Historic Landmarks and feature hand-crafted products (including beer and wine). Read more at [www.amanacolonies.com](http://www.amanacolonies.com). Dinner will be at a classic German themed restaurant in downtown Amana. After a leisurely Sunday morning, everyone will head home as their schedule requires.

Various lodging options have been arranged for the trip. After you book your general registration on MotorsportReg, you also need to call the hotel/B&Bs of your choice to book rooms. Details can be found on the Club website. There is no cost to register, but we need to know how many people will attend for planning purposes.

If you have questions, contact Tom at [tours@northstarbmw.org](mailto:tours@northstarbmw.org).

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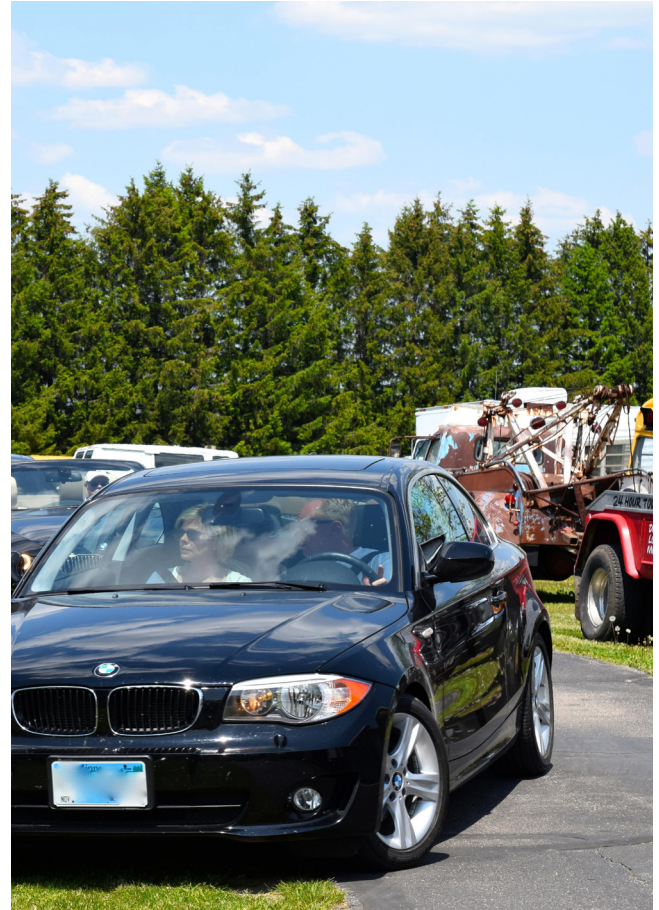
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# Elmer's Big Surprise

Words and Photos by Tom Lawell

The 2016 Road Trip Series kicked off on May 21st with a trip down the Mississippi. Winters in Minnesota can be long and club members were more than ready to get out and cruise with one another. The trip left Cottage Grove at 10 a.m. with 45 people participating. An impressive string of 22 BMWs (and one Porsche, but that's another story) crossed into Wisconsin at Prescott and proceeded south to Stockholm. From there it was a quick left turn and a trek up the bluff to find the amazing back roads of Wisconsin. The day was absolutely perfect with highs in the mid-70s, blue skies and no wind. The forests and farm fields came and went quickly and the group soaked up mile after mile. A rest stop in Durand set the stage for the second leg of the journey. As if it were possible, the quality of the roads were even better as we made our way towards Fountain City and Elmer's Auto and Toy Museum.

Elmer's is a site to behold. As you approach the museum, you first drive through an auto salvage yard filled with 5,000 cars in various stages of rust and deconstruction. You then see what appears to be a farm homestead with a number of out buildings. Sitting high above the Mississippi River (according to Elmer, the highest point anywhere from Itasca to New Orleans) Elmer's 100+ acres is home to a surprising collection that has to be seen to be believed. Hundreds of classic automobiles from nearly every decade since 1910 are on display in five different buildings. Imported cars were rare (no BMWs), but it appeared as if every US make was represented in the collection. Most were low mileage garage





queens that were stuffed into the barns so tightly the group had to walk single file to see them. The walls of the barns were filled with classic metal pedal cars, too numerous to count. Other oddities included a collection of classic snowmobiles and motorcycles, a car raced by Dale Earnhardt, and an antique carousel.

Elmer and his wife Bernadette live on the property and their home is part of the tour since there is a Model T in their living room surrounded by 100s of antique dolls. The final building on the grounds houses thousands of children toys collected since the 1920's. Really, quite an extraordinary collection that's worth the trip.

If you choose to visit Elmer's, be sure to visit their website first ([www.elmersautoandtoymuseum.com](http://www.elmersautoandtoymuseum.com)). They are only open on select weekends or by appointment. They opened special for us which was much appreciated.

After a long pause to enjoy the vista of the river valley, it was time to head back to Minnesota and an early dinner. A quick trip across the bridge brought the group to Winona and the Bridges Golf Course, home to Signature's restaurant and grill ([www.signatureswinona.com](http://www.signatureswinona.com)). The golf course sits behind the well-known "sugar loaf" rock monument that towers above Winona. The rolling countryside was an ideal setting to relax and reflect on our day's journey. The food was excellent and the service was great, especially given the size of our group.

The 260 mile trek was a great way to kick off the driving season. The club offers a day trip every month, so come join the fun. Details on all the driving adventures can be found on the club's website, [www.northstarbmw.org](http://www.northstarbmw.org).



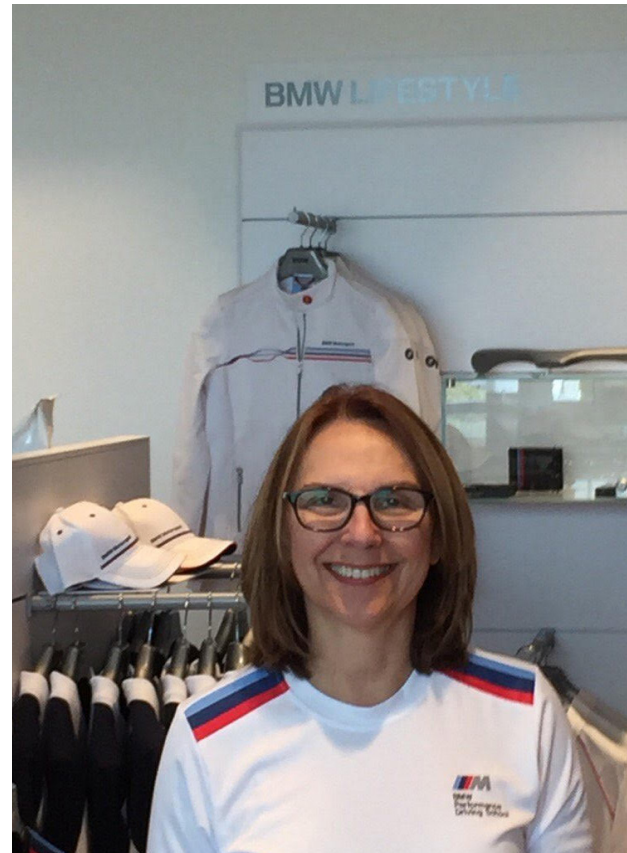
## BMW M performance school

I thoroughly enjoyed the day. It exceeded my expectations! There was more than adequate driving time with 4 different exercises in the morning and another 4 in the afternoon. Our 32 participants were broken up into 4 groups with 2 people per car. An instructor would lead you to the exercise areas and provide instruction via radio. With the exception of a single exercise (M3 skidpad/drift), they were not actually in the car at all. This surprised me a little, but it worked well. Driver and passenger swapped back and forth throughout the day to ensure everyone had an equal amount of time behind the wheel.

All the vehicles I drove were heavily optioned and fresh with maybe 2k miles. I was hugely impressed with the almost 4400lb M5s abilities on the short tight handling course. I suspect all of the M5s needed new tires at the end of the day. My favorite exercise was "follow the leader". You basically follow the instructor around a course that had a nice selection of corners along with a straight section that allowed us to get to just over 100 mph. At the end of the day, the instructors loaded up the M3s with passengers and took us out for a couple of high speed laps of the full 2 mile course - huge smiles all around!

The facility was impressive, lunch was excellent and the instructors were well organized, friendly, charismatic and generally awesome. While I did learn, I would describe this as more of a fun event rather than a true educational one. It provided a taste of what to expect on the two day M Schools. Overall, great value for money and something I would definitely do again.

Tracy made a great choice for dinner on Saturday night and I heard nothing but positive feedback from the participants I spoke with. I don't think we'll have any issues with filling the October event once word gets around.



This event was fantastic! It was far better than I expected and I would do it again in a heartbeat. The dinner was also really nice and great to meet and socialize with some new people.

M3s, M4s and M5s - here for your pleasure - what a BLAST!!!!

This is not a "Car Control Clinic". Plenty of "seat time" to knock the rust off my atrophied track skills. Push an M5 thru the cones then 3 or 4 technical corners followed by a screeching halt inside the stop box for the best time of the day- Lead/follow a BMW instructor in an M3 thru a partial course in another exercise (I'm sure I saw Tracy hit well over 100 when we arrived at the braking point for the left hand corner before the carousel after the back straightaway)

All this in someone else's car. I have no idea what one of these cars cost new but I LOVED being able to drive them all. Great facilities wonderful staff. I would do this again!!!

...to any and all of you at South Carolina outing. It was a pleasure to drive and mingle with you, and I surely appreciate the effort that went in to making the event the success it was.



- The trip was very good. Driving the “M’s” was awesome. I enjoyed the plant tour as well. I think the trip was great for a person with no track experience, like myself. I will do this again in the future if it is offered down the line.
  - Unforgettable experience with a great group of people.
  - Epic.
  - Fun, well organized.
  - Excellent, had a great experience, would like to do it again. Very grateful to the guys who organized this event. Thank you!
  - Better than I expected it was going to be. By a lot.
  - I really had no idea what to expect. We had such an amazing and exhilarating day. Would definitely do it again !
  - Worth a third time in the future
- It was fantastic - really educational as well as fun!



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