

**BMW ACA
Puget Sound Region**

Zündfolge

February 1990



**World According
To Meguiar's, II**

**The M3
Evolution**

**BMW Miata-
beater?**

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Vol. 20, No. 2
February 1990

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Zündfolge is published monthly (except November) by the BMWACA Puget Sound Region, Office Of Publication: 2641 39th W., Seattle, WA 98199. Publication number USPS 715250. Subscriptions \$10 annually (available only as part of \$25 membership fee.) Second Class postage paid at Seattle, WA. Postmaster: send address changes to *Zündfolge*: POB 1259, Bellevue, WA 98009.

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Activities

Waxoyl Product Demo Set for February 24

Waxoyl is a Swiss company specializing in anti-corrosion and preservation products for automobiles. On Saturday, February 24, 10 A.M. at Emerald Detail (8th and Westlake in Seattle) we will be able to witness a demonstration of various Waxoyl products.

We will see how a professional shop applies these products to a vehicle, and, more importantly, *why* they are applied in the first place. While undercoating and rustproofing may not be the sexiest subjects it should certainly prove interesting to see and hear about the process. At the same time you might want to ask those demonstrating the product about how one can best maintain the corrosion protection on your current car. (Which is most likely a Waxoyl product on a BMW).

In addition, Emerald Detail will show the Waxoyl fabric and vinyl protectors, as well as a paint protector which they claim gives significantly better protection from the sun's ultraviolet light than competitors' products.

The local Waxoyl rep has mentioned that the products are widely used in the vehicle restoration trade, so those of you who might be undertaking such a project might want to find out more about how these products fit into your plans.

Emerald Detail is located at 2030 8th Ave. in Seattle. The program will begin at 10 AM. Dress for the weather; although the work area will be heated, people will be using the overhead doors to come and go. See you on the 24th.

Calendar

January 19-
March 4

BMW NA Sponsored Art Exhibit at Henry Art Gallery.

February 24

General Meeting/Tech Session at Emerald Detail, 8th and Westlake in Seattle. The products of the Waxoyl Company will be featured. Undercoating, rustproofing, as well as paint, vinyl, and fabric protection will be covered. Program starts at 10 AM. For more details see the article in this issue.

March 1

Boart Meeting at Mike and Mary Lee Helton's home.

March 24

General Meeting. A slide show and discussion concerning the high-tech lubricants of the Bardahl company will be presented. If you think Bardahl is nothing more than a sign in Ballard you're mistaken – they are quite big in Europe. To find out more, join us at 11 AM at King County Library Service Center, 300 8th North, Seattle.

May 31

General Meeting at Auto Gear in Bellevue. This promises to be a great meeting, with lots of BMW literature, models, and accessories available for your purchase. More to come in future issues.

LONG RANGE:

July 14-15

4th Annual BMW Fest Northwest. Concours d' Elegance Saturday (14) and driving school at Seattle International Raceway Sunday (15).

August 29

Wednesday nighter track session at SIR.

October 13

Fall Driving School at SIR.

Other events will be added to the calendar during the year. If you have an idea for an event, be it tour, rally, or just an old-fashioned get-together, call Vice Pres. Al Lancaster, 854-4100.

BMW ACA events are partially supported by a generous grant from BMW of North America.

BMW Readies Miata Beater

BMW's Technik Division is preparing a cut-price roadster to rival the Mazda Miata and the Lotus Elan.

The new roadster, code-named Z10, is heavily based on the newly released 318iS in an effort to contain costs, rather than on the more exotic, and costly, Z1. The planned price is around \$25,000 U.S. some \$6,000 more than the Maxda (est. UK prices).

The extra cost, BMW believes, is justified by the Z10's additional muscle, its greater size, the fact that it is lower volume – about 50 a day, if the preferred production plans materialize – and that it will benefit from German build quality and the BMW name. The base price includes little in the way of equipment – power steering and ABS cost extra.

Keeping costs down is the key to this project, and that means using as many existing components as possible. In fact the Z10 uses the bulk of the 318iS as its basis – a different style being achieved by peeling off the outer panels – bonnet, boot, door skins, wings and pillars – and cladding the understructure in new clothes.

Disguising the humble origins of the Z10 has been attempted by giving it a well rounded nose and tail, and the Z1's screen, pillars and cant-rail, but the high-waisted look of the donor car cannot be avoided, since this is dictated by the bulkheads and the door inners. The bumpers are of deformable plastic, the front one incorporating the BMW kidneys, which double as air intakes.

The strength lost as a result of shearing the roof off is largely restored by using the bolstered floorpan of the 320i cabriolet. The 318iS engine is a stock part, delivering the standard 136bhp, as are the gearbox and running gear.

There are three methods of production currently under consideration. The

roadster could be farmed out to coachbuilders, such as Bertone or Steyr-Daimler-Puch, or it could be manufactured alongside the 3-series convertible, which stays in production after the new 3-series goes on sale in 1991.

But the solution favored by BMW Technik is to make the car at its own facility, in low volumes, at the rate of 50 a day.

However, such plans are still a long way off. Technik and Motorsport function as almost autonomous units within BMW to afford them maximum freedom, and at this stage the BMW board has yet to even see the Z10, let alone approve it.

That's what Technik boss Dr. Klaus Faust will be hoping for, of course, not least because he wants to make an impact in his relatively new post. Since Technik is effectively in competition with Motorsport and the main design centre, getting approval would represent a small victory.

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At the moment, however, the project has only just progressed beyond the clay model stage – the first running prototype has been built, and is being painted (red) as this is written.

If approval is granted, Technik reckons it could have the roadster in production within 18 months, which should give Mazda and Lotus something to think about.

–Car



The World According to Meguiar's, II

(Editor's Note: This is the second and final installment of Thomas B. Nast's excellent article on the care of BMW exteriors.)

Splatter. It is inevitable that, using machines, slop will get all over the car. It will look like a dog shook itself off nearby. For this reason, you should plan on doing each step to the entire car (or as much of it as appropriate) before moving on to the next step. You could cover areas not being worked with soft (e.g. terry) cloths, but it's probably easier just to wipe up slung liquids with terry cloths.

Other suggestions: Wear an apron or coveralls, for some of the splatter will be tossed onto you, particularly your chest and gut. And start at the top of the car and work down, because splatter obeys the law of gravity.

Another characteristic of splatter is that it gets into cracks, such as between the hood and fenders, the door jambs, and so forth. You will find a thin line of splatter behind the edge you just worked. I suggest that after each operation, you open the appropriate panel and remove the spatter before it dries out. Use a terry cloth. It may take a couple of wipes, as a thin residue will be left after the first pass.

Wash the car. When washing the car, do use plenty of water and never, ever use a detergent (like dish soap). Wet the car thoroughly before soaping. Do one panel at a time (so the soap doesn't dry before it is rinsed), starting at the top. As I apply the soapy water to an area, I flush it with the hose at the same time. Keep turning and rinsing the terry cloth, because dirt trapped in it will scratch the finish. Never wash in direct sunlight. Meguiar's recommends its 00 wash, and I have found none better (only \$11.00 for a half-gallon, and it will last years), but most any quality car shampoo will do fine. Meguiar's also makes a spray-on wash, No. 34, which you wipe off with a terry

by Thomas B. Nast
Photos by the author and Ken Schmidt
Copyright 1990 by Thomas B. Nast

cloth. The notion of wiping off a dirty emulsion scares the hell out of me, because how can you avoid abrading the surface as you wipe? Nevertheless, it seems to work. Dry the washed car with The Absorber or clean terry cloths, again turning them frequently to avoid scoring the finish with dirt particles. Leather chamois is not recommended for drying (or anything else, for that matter, except patching elbows).

Clean the car - conventional paints. "Cleaning" the car is not the same as "washing" the car. A "clean" car is free of oxidized paint, road tars and salts, acids found in the rain, and so forth. The car is chemically clean, and the pores of the paint are free of contaminants. Thus, a wax-based product is *not* used for cleaning. Meguiar's cleaners are No. 1 (coarse) and No. 2 (fine) and No. 4, which is like No. 1 but is for hand application only.

In the Meguiar's world, use No. 2 for most cleaning by hand, applying the liquid directly to the pad. No. 4 is used only to remove heavy oxidation or relatively deep scratching. Experience will teach you that the proper amount is more sparing than you think - it does not need to be slopped all over. Expect a moderately needy finish to require thirty to forty strokes to be clean. No. 2 has feeding oils, cleaning chemicals and a diatomaceous earth abrasive. I have found it to be gentle and effective.

If cleaning by machine, the product you will use depends upon the condition of the paint. A nearly new finish will need no cleaning at all - the step can be skipped, and you can go straight to polishing. An average finish with some oxidation will require No. 2 cleaner. A severely oxidized or swirled finish will require a No. 1 cleaner. If you use No. 1, plan on following up with No. 2 before moving on to polishing.

The key is to start with the least aggressive treatment, and only if that proves insufficient do you move on to a more aggressive product. If in doubt, powder. If one application and buffing is insufficient, try another.

Polish the paint - plastic paints. No. 9 is recommended for plastic paints for use by machine. It contains a different blend of polishing agents than the other polishes, and is designed for the tighter molecular structure which plastic paints present. It is also the easiest



use the least aggressive. And it sometimes takes more than one pass to get the job done. Again, you are better off with two passes of No. 2 than one pass of No. 1, but I would draw the line there. You will quickly develop a sense of just what the two different cleaners do. If in doubt, experiment on test patches, as experimenting on whole panels is very time consuming, not to mention risky.

Clean the car - plastic paints. First, read everything above concerning enamels. Now plug this in: plastic paints are harder than conventional paints. That means that you treat them *less* aggressively. Why? The harder the paint, the milder you treat it, as harsh treatment will induce scratching you can't easily polish out (induced scratching is relatively easy to polish out of softer paint). Thus, you will want to avoid No. 1 (use only No. 2)

cleaner and you will run your polisher at its lower speeds (generally below 2000 rpm). If cleaning by hand, also use No. 2.

Polish the paint - conventional paints. The Meguiar's family of polishes includes Nos. 3, 5, 7, and 9, oddly enough. Unlike the cleaners, a polish is not an abrasive. It is a blend of liquids which allows the buffing pad itself to act as the abrasive (this is why you bought those expensive yellow foam pads), by acting as a lubricant. For enamel paints, we use No. 3, which is designed for use with machines. By the way, I have had a problem with blockages in the dispenser nozzles of No. 3, so be aware that this is sometimes a problem. For hand application, use No. 7.

The polish is really the finishing touch, the final sanding. It will remove very light oxidation and very fine swirls.

For machine application, the polish may be squirted directly onto the panels, doing one panel at a time. The polish may be buffed until the material breaks down, but before it dries into a of the polishes to use, if you need further incentive. For hand application, also use No. 9.

Seal the paint. By sealing the paint, we mean nourishing it and hiding hair-line scratches. At the same time you polish it you are restoring the oils to the paint which washing, age, sun, rain

and air (smog) have leached out, and at the same time cosmetically concealing light scratches. (this is not to be confused with the "seal jobs" done by car dealerships, which involves putting a polymer over the paint, rather than oils into it.) The immediate difference this step makes, especially for dark-colored cars, is so impressive that you would use it even if it didn't renourish the paint. Meguiar's claims the benefits accrete with each application, which is why they call it a "Sealer/Reseal Glaze".

The sealer, No. 7, can be applied with a rigid foam pad, soft sponge or a terry cloth. Apply the sealer directly to the car, and spread it out evenly with the pad. The pad will literally glide over the sealer. The idea is to coat the panel (start by doing one panel at a time, until you gain experience with curing times) with as thin a coat as will completely seal it. The sealer can be further worked into the paint using a terry cloth. The more which is infused into the paint, the better.

The sealer will not fully dry (nor would you want it to); hence, it can be wiped off one panel at a time or after the whole car has been coated. Using the terry cloth towel, wipe gently using straight strokes. A residue will be left, which can be wiped up with a fresh terry cloth. Continue until all the sealer is removed.

Wax the paint. Whether by hand or by machine, and whether the paint is conventional or plastic, use No. 26 liquid wax. I have found buffer application to yield results superior to hand application here, but others feel differently. Paste wax may not be used with a rotary buffer. Use two thin coats rather than one thick one. For machine application, apply the wax directly to the car and buff in 8" columns. If applying by hand, use the same procedure as No. 7 sealer. By machine, buff using light pressure and overlapping strokes, leaving a film to dry; do not buff until the material begins to break

down! Use the slowest buffer speed possible. By hand, rub the wax thoroughly into the paint so that it fully penetrates. Wipe with clean terry cloths, which will take several passes a few minutes apart.

How long you let the wax dry (cure) is critical. It should dry to a hazy white. If you drag your finger across it, it should ball up and not smear. This will take five or more minutes. If wiped off as a liquid it does no good, and it is difficult to remove and you risk damaging the finish if it is left to dry to a powder. Of course, the warmer the day the faster the dry time. Keep an eye on it, and experience will quickly teach the optimum.

After the excess is wiped off with terry clothes, there may be oils from the No. 7 left on top of the wax. This is best ignored for a day, after which the oil may have been absorbed by the paint and a quick pass with a clean terry cloth will solve the problem. Otherwise, wash the car down with No. 00. Many have found that after the full Meguiar's treatment, a 00 wash further improves the car's appearance!

Maintenance. Wash with 00, polish with No. 7, then wax. If this is done as needed, the car will seldom need the cleaning step. Since cleaning is the most time consuming, laborious and wearing on the paint, routine maintenance is a sensible (if self-disciplined)



alternative to an annual or semi-annual detailing.

Clean the glass. The glass may be cleaned, again preferably by machine, using No. 1 if by machine or No. 4 if by hand (and don't try to do the inside of the glass by machine). I am amazed how already "clean" glass can be made to just sparkle with this treatment. And you should do it before polishing and waxing, as there will be cleaner splattered all over the glass from when you cleaned the paint, and cleaner will be splattered over the paint when you polish the glass.

Glass can be finished with Rain X if you wish (outside only). For those who haven't tried it (and it has been around for quite a while), Rain X seals the pores in the glass, which causes rain to bead and fly off, and also gives your windshield wipers a smoother ride. The down side is complaints about hazing, especially in difficult lighting conditions (dusk and dawn). I have used the stuff intermittently for about a dozen years, and I think it's a good product if used correctly (the residue must be wiped *completely* off, and you can't tell if it's completely off in certain lighting conditions). Give it a try; it's under \$15 per bottle, which will last half a lifetime.

Clean the rubber. While the wax is curing is a good time to get started on the rubber and vinyl. Cleaning is done with No. 39 and a nylon-bristled brush. On the exterior, hose off the cleaner. For protection and appearance, No. 42 works well with rubber bumpers, tires, etc. It soaks in, and may take multiple coats. It does *not* leave a shiny coat like Armorall, and seems to have less of a tendency to wash off in the rain (the streaks Armorall leaves as it washes off is one of many reasons to avoid the stuff).

Clean the plastic. Interior plastic parts may be cleaned with No. 40, which can be wiped on or (if the filth requires it) brushed with a brush of stiff plastic bristles. (For real grunge,

No. 39 is a more aggressive cleaner.) It is an Armorall substitute, except that it leaves matte finishes matte. (I dislike Armorall's making everything shiny. I also dislike the way it evaporates and deposits itself on the windshield as a haze, something No. 40 also does not seem to do.)

High impact plastics, such as turn signal lenses, can have scratches removed by machine with No. 1 and No. 3 cleaners; No. 10 can be applied for protection thereafter. I have restored lenses I was ready to scrap with these products. No. 10 is the industry standard for cleaning plastic airplane windshields, by the way (they are restored with a product called Micro Mesh).

Clean the wheels. Everybody has a favorite wheel cleaner, from Mothers to Eagle One. Meguiars sells No. 36, which is used with a household paint brush and elbow grease. The No. 36 is non-acidic and is not corrosive – it will not damage wheels. So try them all, and use what you like best, but don't wait until after you have damaged your wheels with another product to try the Meguiar's.

Summary of applications. By machine: Conventional paints: Wash with 00. Clean with No. 2 unless severely oxidized or deeply scratched, in which case use No. 1. Polish with No. 3, seal with No. 7 and wax with No. 26. Plastic paints: Wash with 00. Clean with No. 2, polish with No. 9, seal with No. 7 and wax with No. 26 liquid.

Summary of products. A summary of relevant Meguiar's products and their uses:

00 – Wash. One capful per gallon of water.

1 – most aggressive cleaner, for use with machine. Fairly abrasive, and without chemicals. Use only if milder cleaners don't do the job, and not on clear coats.

2 – mild cleaner for use by hand or machine. Less aggressive than No. 1 or 4.

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- 3 – machine polish, for enamels.
- 4 – very aggressive cleaner for use by hand. Can also be used as a glass cleaner.
- 5 – cleaner-polish, for use by hand on conventional paints. Contains a mild cleaner.
- 6 – cleaner/wax for the one-step crowd. Not for you.
- 7 – sealer/reseal glaze. Apply by hand. Full of feeder oils and other good stuff, and hides hairline scratches.
- 9 – machine polish for plastic paints.
- 16 – Obsolete paste wax. Apply by hand.
- 20 – Polymer sealant. For the annual detailer type. Not recommended for fine German cars.
- 26 – Modern paste and liquid wax. Can be applied by hand or machine.
- 36 – wheel cleaner. Use with paint brush and elbow grease.
- 34 – Squirt bottle wash. Good for concours and prepping panels about to be worked.
- 39 – Rubber and vinyl cleaner.
- 40 – Vinyl and plastic cleaner/conditioner. Goodbye Armorall!
- 42 – Rubber cleaner/treatment.
- S-2005 – Meguiar's Nikken sandpaper (2000 grit). Most commonly used grades are 1000, 1200, 1500 and 2000.
- K-2000 – Meguiar's sanding block (2000 grit). Available in grades from 400 to 3000.

Return of the Membership Drive

Those of you who are old-timers in the club may remember the days when we had an annual membership drive. You probably tell the grandkids about those good old days while sitting around the fireplace on these rainy winter nights.

You'll be glad to know, the good times are back! That's right, you and your kids and grandkids can now experience the thrill of yesteryear! The membership drive is being reinstated for the first year of the new decade!

How does it work? Simple! At each monthly meeting (usually on the last Thursday of the month, so mark your calendars now!) you will find a stack of newly minted "comp cards" available. You will need these to play the game, so grab a handful - the more cards you get, the better your chances!

What do you do with these cards? Simple! When you joined the club, you got a club decal. And, of course, you immediately put that decal at the bottom center of your BMW's rear window. (If you have one of those new-fangled rides with a brake light in the place of honor, you can put it in a corner of the rear window - or if you have so many kids in college that there is no room for one more decal in the rear window, the lower, rear-most corner of the driver's side back window is an acceptable alternative).

I'm sure you're getting the picture now! That means any time you see a BMW without a decal in the window, they **MUST** not be a club member! And if they knew what a great club this was, you just **KNOW** they'd want to join. So take the top card in that stack you picked up and are storing in your glove box, and slap it under their windshield wiper. (Safety note: this technique works best when the target car is parked. No bonus points are given for attempting this maneuver while in motion, so why take the chan-

ces with your fingers, and, more importantly, **YOUR** bimmer?)

So, how do you get points in this game? Simple! Before you deal out those cards (oops, better retrieve that one you just left on the new 525i), write your name in the field on the card labelled "card left by:". Do it **NOW** on the **WHOLE** stack, so you don't forget later. And put that top one back on the 525i.

By the way, do you know why these are called "comp cards"? You probably sent one in before you joined the club, and it got you a complimentary copy of the *Zündfolge* magazine. That's right, the "comp" is for the complimentary magazine issue it gets you!

The scoring goes like this: For every comp card sent in by a prospective member requesting information on the club, the name listed in the "card left by" field gets one point. If the sender of that card **JOINS** the club, that's worth two additional points!

What are these points good for? I'm glad you asked! At the November banquet, the club will hold a raffle for a really big prize. This is not likely to be a million dollars a month for life, but we can guarantee it will not be something to sneeze at! In the past prizes have included a nice BMW leather jacket, and a free one month lease on a new BMW! We will not divulge this year's prize yet (because we haven't found a world-class item yet), but rest assured that the board of directors is, as you read this article, searching the northwest for a suitable prize, which will be announced in a later issue.

Everyone in the club, whether or not they attend the banquet, will receive one chance toward the prize. Each of the membership drive points is worth one extra chance! So you can see that the odds of winning the BMW ACA lottery grow more attractive with each card you pass out, and with each person who joins on your referral!

Here is an inside tip on increasing

your odds toward playing a winning hand. People contacted personally are more likely to send the card in - so if you spot the owner of that 525i, hand the card to him personally. He may have a few questions about the club that you can answer, and based on your enthusiasm alone, he may request to become a member immediately!

And in the end, that's the real joy of belonging to the club - meeting and making friendships with other people with whom we share a common interest - our cars!

So grab a stack of those cards and start hunting for some unenlightened BMW owners. You'll probably accumulate some more of those stories to tell around the fireplace, and could win a nice prize to boot! Happy hunting, and good luck in the raffle!



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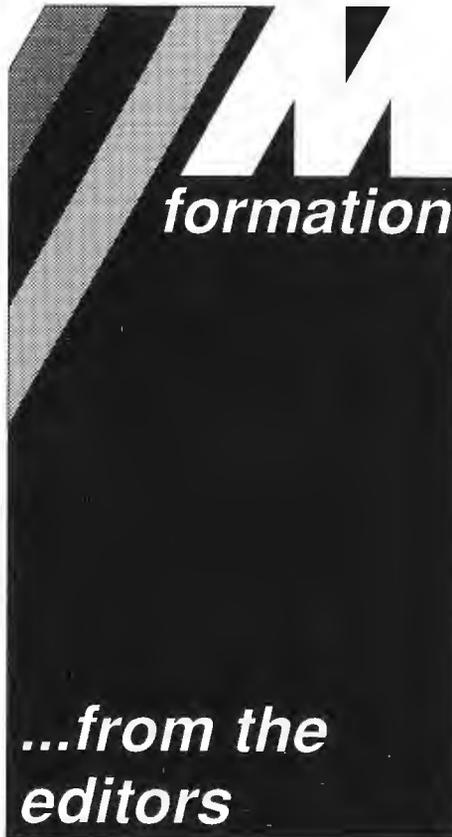
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Volvo has hardly been shy about telling the world about how safe their cars are. And, according to the Highway Loss Data Institute, both the 740/760 and the 240 models fare about 20% better than average when it comes to injury claims. However, neither of these are anywhere near as good as the 82-88 Five series, whose injury claims are a whopping 45% below the average. Fiver owners might want to remind their insurance company of that fact at renewal time. (Car)

A new 7-series is expected to be ready by 1994. Styling changes on early cars are small yet noticeable: single lenses instead of the traditional dual lamps, and the wider and shorter kidney from the 750i. Expect this car in 1994. (Car)

Italy's latest approach to *autostrada* (freeway) speed limits is novel if nothing else. The new limits will be 130 km/h (80mph) for cars with engines larger than 1100cc. Those with smaller engines will be limited to 110 km/h. Such a system will definitely add a new twist to the age-old child's game of car-spotting. It will replace a system where speed was limited for all cars on weekends and holidays. (Car)

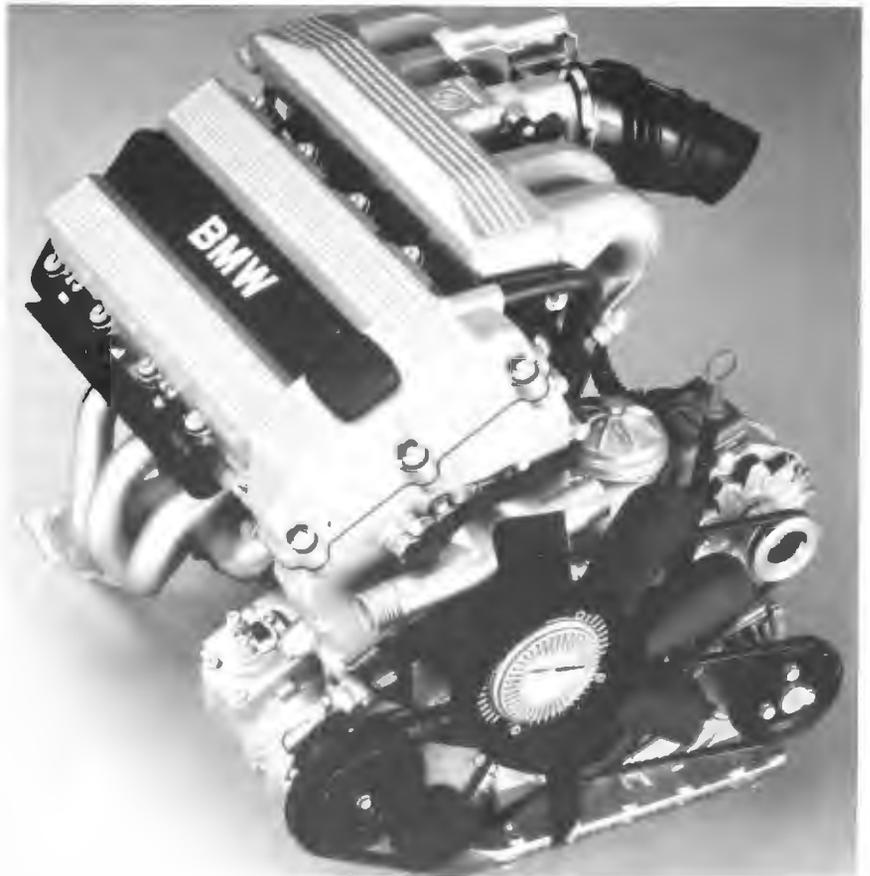
Ya gotta love the new Subaru TV ads touting their new ABS system: they're almost a perfect copy of an old Audi campaign, right down to the punch line. The new Subaru commercials talk about Volvo's obsession with crash protection while the video shows a car at speed stopping just short of a concrete wall. Unoriginal or not, it's hard to argue with the punch line: it's better to avoid accidents than merely survive them.



BMW of North of America is currently sponsoring an art exhibit at the Henry Gallery on the UW campus. The opening of the show was first class, typical of BMW. The contemporary "art" is, ah, different.

BMW has disbanded its dealer advertising associations, which means dealers no longer are forced to pay an average of \$300 per car into an ad fund. (Autoweek)

BMW is working on both a coupe and a convertible based on the 5-Series. The coupe shows more development at the front with a sleek, low grill and tapered hood. No date for debut, though the convertible may appear first, in the early 1990s. (Car)



According to Eberhard Von Kuenheim, chairman of BMW AG, the company will "have a presence in Group C, probably an engine, by 1991," but has no plans to return to Formula One "even though we have the technology to do so." (*Autoweek*)

New Jersey motorists face a new peril. On Interstate 280 near Newark, about 10 motorists have been robbed. The novel technique used by the bandits is to drive up behind a victim and tap the rear of their car. When the drivers get out to exchange information, they are confronted with two or three men armed with knives or guns. The crooks have taken cash, jewelry, radar detectors and car stereos. (*The New York Times*)

The David Heard M3

David Heard is one of three charter members in the club; he was around at the beginning. David has driven his trusty 2002, with round tailights, since new. David is famous for asking questions whenever we have a general meeting hosted by one of the dealers. Questions like, "How come they can't build a simpler car without all the computers and junk for a lower price?" David, your car is almost here.

BMW NA has announced the 318iS, a relatively stripped 3-Series with a new 16 valve four cylinder engine. The chassis is lowered and tightened. "The idea of the 318iS was to recapture the old BMW traditions as reflected in the 2002 of the 1970's," said Has Heiland, director of 3-Series development for BMW AG.

The price is \$21,500 for what amounts to a baby M3. The suspension is quite stiff, much like the M3. Top speed is 130 mph. Horsepower is 136.

The U.S. model has electric windows, air conditioning and ABS as standard equipment. Quite a value. David, the dealers are waiting.

Production began in January of the new 850i supercoupe. Plans call for a May European introduction and U.S. intro this summer. The price has been set at \$73,600, only \$3,600 more than the 750iL. The first year's U.S. production of 1000 cars has already been sold.

The 850i has a coefficient of drag of only 0.29 despite the front-mounted V12 and huge wheels, tires and brakes. The car features the first production coupling of a V12 and 6-speed transmission. A cellular phone and CD player are standard. The only option is a \$1000 set of forged alloy wheels. (*Autoweek*)

There are two minivan projects at BMW. The first is based on the 5-Series platform and is aimed at sporty-luxury buyers. The second is still under development; it could be the Rolls-Royce of people movers, based on the 750iL platform and carrying the 5.0-litre V12 engine. This vehicle would be able to accommodate eight passengers and offer 4wd. To further increase maneuverability, BMW is hoping to be able to adopt an experimental four-wheel-steering system. Despite this progress, it remains uncertain if BMW has decided to enter the minivan market. (*Autoweek*)



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The New BMW M3 Sports Evolution

1989 was the third year of overwhelming racing success for the BMW M3 in many motorsport events both in Germany and abroad: More than a dozen touring car and rally championships now go to the victorious credit of this compact sports saloon from Munich.

What makes all these racing wins even more significant is that they were achieved in part against much more powerful competitors. For while the basic concept of the racing M3 has remained almost unchanged since the car's first entry into motorsport in 1987, consistent improvement of each and every detail has served to permanently enhance the potential of this outstanding car.

In 1990 BMW will once again face keen competition in international touring car championships. All of these racing events involve cars very closely related to their production counterparts. A minimum of 5,000 units of each car must have been built in 12 consecutive months to qualify for participating.

In motorsport stagnation means taking a step backwards. Accordingly, the experienced engineers of BMW Motorsport GmbH are giving the M3 some important modifications to the engine, suspension and body on its road to new success in the forthcoming racing season.

To legalize technical developments for use in motor racing – the so-called process of evolution – the international sports rules imposed by the international de l'Automobile (FIA) require further production of at least 500 identical units for subsequent homologation (qualification for motorsport) in Group A.

Since the new M3 Sports Evolution is to be homologated on 1 March 1990, production of this new car will start in January 1990.

The new BMW M3 Sports Evolution therefore owes its existence to the pertinent motorsport rules. However, this fascinating car is by no means a kind of "special model", but rather a new stage in the development of the successful M3.

This new sports saloon is absolutely unique in terms of its performance and market position. It is not intended to replace the previous M3. On the contrary, this highly successful model (launched in 1986 and now with more than 14,000 built), will remain within the BMW line-up in future.

Through its concept and design, the new BMW M3 Sports Evolution fulfills the highest performance-oriented demands in terms of technical features, road performance and model fitments – it is the epitome of the sports saloon through and through. In addition, the M3 Sports Evolution is a very close technical relative to the racing version of the M3 and thus once again creates the close link between production and racing so typical of BMW.

Modifications to the power unit: A real phenomenon in terms of output per litre

The four-valve four-cylinder power unit of the BMW M3, which is already known as the "world champion in output per litre among all normal-aspiration engines with catalytic converter" in its 215-bhp version, now receives a further, substantial boost of its major specifications in the M3 Sports Evolution.

Engine capacity of the M3 Sports Evolution has been increased from 2302 cc on the "standard" M3 to 2467 cc, corresponding to 7 percent growth in cubic capacity. This is achieved by the larger cylinder bore (95 mm as opposed to previously 93.4 mm/3.74"

versus 3.68") and larger stroke (87 mm in lieu of 84 mm/3.43" versus 3.31"). Maximum output has been increased from 158 kW/215 bhp at 6750 rpm on the "standard" M3 to 175 kW/238 bhp at 7000 rpm – an increase of 11 percent.

Maximum torque of the M3 Sports Evolution has also been increased: while on the "standard" M3 torque peaks at a substantial 230 Nm (170 ft/lb) at 4600 rpm, the new 2.5-litre engine develops no less than 240 Nm (177 ft/lb) at 4750 rpm, up by 4 percent.

The substantial output per litre already mentioned has also increased even further on the new engine. The previous "dream figure" of 68.6 kW/ltr is now up markedly to 70.9 kW/ltr on the M3 Sports Evolution. The significantly better cylinder charge made possible by this high output per litre allows a reduction of the compression ratio from 10.5 to 10.2:1, ensuring optimum fuel economy, emissions control and performance. The new M3 Sports Evolution runs on unleaded premium-grade fuel.

This substantial increase in power and performance is made possible not only by the larger engine but also by intake valves with a larger diameter of 38.5 mm (1.52") as opposed to 38 mm (1.50") on the "standard" model as well as an intake camshaft with a "longer" opening angle (282 instead of 265°). New piston cooling by means of oil injection jets plus sodium-filled outlet valves maintain a stable thermal balance of the engine, whose only visible differences from outside are the red-colored spark plug leads.

Various top-level features clearly show that this power unit is once again a typical BMW engine. The emission control system, for example, is state-of-the-art in every respect, incorporating a metal catalytic converter. This

kind of catalyst generates much lower counter-pressure within the exhaust system and thus means virtually no loss of power while maintaining the same high standard of emission control efficiency.

The M3 Sports Evolution accelerates the classic distance to 100 km/h (62 mph) in just 6.5 seconds, covers one kilometre from a standing start after 26.7 seconds and has a top speed of 248 km/h (154 mph). For comparison, the "standard" M3 accelerates to 100 km/h in 6.7 seconds and covers the standing-start kilometre in 27.3 seconds.



The new Evolution engine is not only a dynamic sports machine willingly churning out power at high engine speeds, but also a genuine work-horse with substantial pulling force in all gears. Accelerating from 80 km/h (50 mph) in fourth gear, the M3 Sports Evolution reaches the 120 km/h (75 mph) mark within just 7.6 seconds.

At the same time the engine is really economical, maintaining virtually the same standard of fuel economy as its 2.3-litre counterpart. A comparison of fuel consumption data: 6.2 ltr/100 km (45.6 mpg Imp) at a constant 90 km/h ("standard" model: also 6.2 ltr/100 km), 7.8 ltr/100 km (36.2 mpg Imp) at a constant 120 km/h (7.8 ltr/100 km), and 12.5 ltr/100 km (22.6 mpg Imp) in city traffic (12.4 ltr/100 km or 22.8 mpg Imp).

Chassis modifications: Refinement to the last detail

Already offering a brilliant standard in every respect, the sports chassis of the BMW M3 was ideally suited for the Sports Evolution and therefore required only a few specific modifications.

As on the previous M3, the wheels are suspended on the proven single-joint spring strut axle at the front and semi-trailing arms at the rear.



At the front the suspension has been lowered by 10 mm (0.4") and the brakes adapted to the even better performance of the car: A new material, even more heat-resistant than in the past, ensures an even higher standard of brake efficiency without fading even under the toughest conditions.

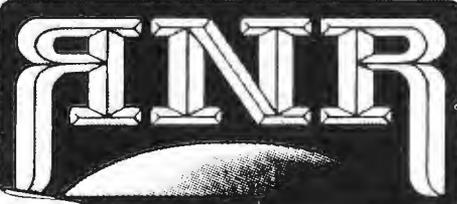
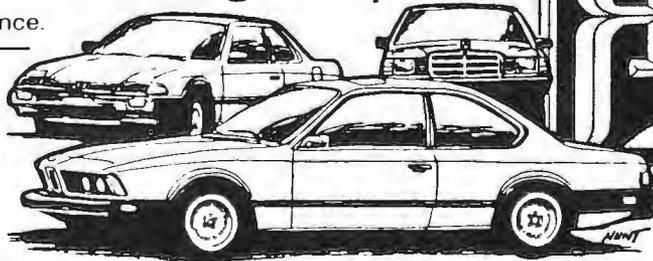
The light-alloy wheels fitted as standard now come in even larger dimensions. While the "regular" model runs on 7 J x 15 wheels with 205/55 ZR 15 tires, the M3 Sports Evolution has wider wheels in attractive cross-spoke styling with the hub and spokes finished in Nogaro silver. Wheel size is

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7½ J x 16, the tires are exclusively 225/45 ZR 16 Michelin MXX.

Bodywork modifications: Streamlining made visible

Consistent modifications in streamlining - above all with a view to motorsport requirements - are clearly, but not pretentiously, visible on the M3 Sports Evolution.

This unusual car is available exclusively in two very special styles of paintwork: glossy black with red contrasting stripes on the bumpers or brilliant red with black contrasting stripes.

Adjustable streamlining features are now becoming increasingly important in motor racing, since different race tracks with specific requirements necessitate optimum adaptation of the car. Hence, the M3 Sports Evolution comes with brand-new front and rear spoilers manually adjustable - contrary to the spoilers of the "conventional" M3 - to three different positions.

In "basic" position, that is with the spoilers fully retracted, there are still slight lift forces on the front and rear axle. An interesting point is that while this maintains the same good drag coefficient as on the "normal" M3, front wheel lift has been substantially reduced - a feature appreciated above all by the sports-minded motorist.

Fully extended, on the other hand, these important streamlining components reduce lift forces to virtually zero at the front and even achieve slight down-forces at the rear. Expressed in figures for the technically minded reader, this means an increase in axle load by a substantial 840 Newton at the front, while at the rear it is still a remarkable 400 Newton (measured at top speed).

In everyday motoring this means a substantial improvement of driving safety. Higher down-forces both front and rear not only improve the han-



dling of the M3 Sports Evolution in all kinds of bends thanks to the greater transverse stability of the wheels, but also ensures much better grip on wet roads. A further advantage is that the driver has a much better "feel" for road conditions and vehicle movements, the car itself responding even better to the steering.

Using easy-to-operate bolted joints on the front and rear spoilers, the driver of the M3 Sports Evolution can quickly and easily set the spoilers to these two positions plus a "compromise setting" in between. This provides a total of 9 possible spoiler combinations, which the driver may vary at random, depending on his requirements. Naturally, both spoilers are

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Another new streamlining concept is the "venturi" spoiler integrated in the front. Through its shape, it artificially narrows the flow of air beneath the car by means of a V-shaped wind deflection profile. As a result, the air flowing beneath the car accelerates to a higher speed and creates an under-pressure, the car being literally "sucked" on to the road.

In fact, it is the front section of the M3 Sports Evolution which reveals the largest number of visible modifications versus the previous model. As an example, the BMW kidney grille has a slightly modified fin profile ensuring a further improvement in cooling efficiency. All openings in the body at the front end of the car (headlights, front ornamental grille and engine compartment lid) are additionally sealed to provide even better streamlining.

Apart from superior engine output, low weight is another essential factor in motor racing. Hence, even the road version of the M3 Sports Evolution has lost a couple of kilos in the interest of supreme performance for the sports-minded driver. The front and rear bumpers, for example, have been reduced in weight even further, and a considerable amount of weight has been saved on the luggage compartment lid, rear window and rear side windows.

The front wheel arches now flared even more distinctly clearly show that the M3 Sports Evolution is destined for motorsport. In the future, the car can be fitted with even larger racing tires. Where the foglamps are fitted on the "standard" M3, the M3 sports Evolution features extra-large cooling ducts for keeping the brakes cool even in heavy-duty applications.

Last but not least, the engineers of BMW Motorsport GmbH fit the high-performance but very fuel-efficient M3 Sports Evolution with the fuel tank

of the BMW 320i/325i providing ample capacity of 62 litres or 13.64 Imp gals. A side-effect of this quite substantial saving in weight is the much larger luggage compartment capacity.

**The interior:
Racing atmosphere at its very best**

The new BMW M3 Sports Evolution would not be a genuine product of BMW Motorsport GmbH if it failed to offer the sheer driving pleasure so typical of the blue-and-white marque. Accordingly, the driver enjoys the racing environment of a professional cockpit with all the amenities which add that extra bit of pleasure to dynamic motoring.

New M sports seats with special body contour and racing seat styling catch your eye immediately when looking inside the car. The headrests are attached positively to the seats and feature an opening in the middle allowing the driver of the M3 Sports Evolution to subsequently fit racing belts to the seats of his car.

It goes without saying that the new seats - which, through their backrests and seat bottoms give the driver and front passenger far more side support than the already very well contoured seats of the "standard" M3 - may be adjusted very accurately for length, height and angle. Hence, drivers of all sizes will find a relaxed but alert seating position at the wheel of the M3 Sports Evolution.

The red seat belts encourage the driver and front passenger to buckle up, beautifully rounding off the interior of the M3 Sports Evolution, kept exclusively in anthracite. The center-pieces of the seat upholstery and door panel inserts are in BMW M Design. A green stripe across the windscreen

avoids any significant dazzling by light from above.

The driver of the M3 Sports Evolution not only has an excellent seating position and visibility, but also a particularly good steering wheel. For experience gained in motorsport has gone directly into the design of this production steering wheel for dynamic driving. In addition, the M Technic sports steering wheel adds to the outstanding cockpit flair of the M3 Sports Evolution.

The steering wheel rim is covered with rough black leather extremely pleasant to feel and with a certain sheen after some time of use. The shift lever knob and handbrake lever handle are also finished in black rough-surface leather.

Further special fitments on the M3 Sports Evolution are the doorsill entry strip with "M3" lettering, the driver's footrest for providing an even better position in the seat and the shift lever knob with illuminated gearshift pattern.

- BMW AG Press Release

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For Sale: 320i Brake calipers and rotors - Upgrade your 2002, \$125; 4 speed transmission from 320i (79), \$225; Escort Radar Detector - steal it for \$95; 2002 engine complete except bare head (Does have cam, valve gear, etc.), \$300; Alpina front spoiler for 320i. New, never used, \$125; Brake booster unit from 320i, \$25; Sears Bushwacker (trimmer plus brush cutter) includes 8" blade. New, never used. 1/2 price at \$95; Volvo 240 series factory trailer hitch, including ball, bolts to frame, fits 78-86, \$90; Sheepskin seat covers, from '83 Rabbit but fit ?, \$45. Ted Rodgers 432-2336, evenings.

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The Parting Shot

About Airbags

by Robert A. Gleason, Jr.

A recent advertisement for Allstate in *USA Today* stated that the insurance company has operated a fleet of cars equipped with airbags for 15 years. After 30,000,000 miles, those cars have been in over 300 crashes, with 20 serious enough to employ the airbags.

In each case the airbag saved the occupant from significant injury. Many other studies have proven that airbags save lives and reduce injuries. Many automobile insurance companies offer premium discounts of up to 30 percent for automobiles that are equipped with airbags.

Allstate's record was one deployment for every 1.5 million miles driven. I drove an automobile 25,000 miles in 1988 and experienced two deployments. I am probably the only person in this country—other than the dummies shown on television in the crash tests—to suffer two airbag deployments.

As an insurance broker, I know of the many sad and horrible stories and consequences of automobile accidents. My occupation causes me to drive about 30,000 miles a year. Thus I have always been wary of accidents. Safety has always been an important consideration when I purchase an auto. In fact, I remember having seatbelts installed in my first new car—a 1961 Plymouth Valiant. So naturally, I was pleased that my 1988 BMW 750iL included an airbag on the driver's side.

Not having been involved in an accident for almost 34 years, I was surprised when, in March 1988, a driver pulled out in front of me as I was proceeding on a highway at about 55 mph. I began a panic stop (I have attended Skip barbar's driving school where panic stopping is taught) and hit the other car broadside. The ABS worked quite well, as I did not skid, and this, plus my quick reaction, probably saved

the other driver's life. Awaiting the sickening thud of metal against metal, I had no thought of airbags. As my car T-boned the other car broadside, I felt a brief pressure (almost unnoticeable) on my face. This was the airbag popping. There was no vision impairment or "suffocation" as some people have alleged. The bag held my head back against the head rest. The seat and shoulder belt also restrained me. I suffered no injury. My wife, on the other hand, suffered a neck and hand injury because she had no airbag on her side. She recovered fully.

The damage to my car totaled an astounding \$16,500. The big surprise was the cost of the airbag system—\$5,000. The system cannot be repaired, only replaced. Fortunately, the other driver's insurance paid for everything. My dealer, Mike Smith at Laurel BMW in Johnstown, Pa., did an outstanding job of repairing the auto and returned it to me in like-new condition.

On Dec. 1, 1988, I left my home early in the morning on a business trip. It had snowed that night, and the roads were icy.

About 45 minutes into the trip, without warning, a car slammed into the right front of my 750iL. I was traveling about 55 mph on a dry portion of a two-lane road and did not see the accident develop, as I was rounding a curve. The other driver had lost control of his vehicle on an icy bridge, went off his side of the road out of my peripheral vision, overcorrected and then careened across the road into my car. My first knowledge of the accident was the contact.

The collision caused the airbag to inflate, taking the initial impact. Once again, the airbag inflated and deflated instantaneously. The impact caused my car to slide sideways for about 100 feet, go off the road and over a guardrail. It then rolled over 1½ times as it slid down a 30-foot embankment toward a small stream. I held on and watched through a hellish, few-second

ride. The seatbelts held tight as the side windows shattered into small pellets (as they are designed to do). As the car tossed and rolled I never thought about death or serious injury. I had confidence in my car. The car ended up on its side, driver's side down. The silence was eerie, broken only by the sound of the CD player which continued to play classical music.

My first thought was to get out of the automobile as fast as possible. The one disconcerting thing about airbags is that the mechanism that inflates them leaves a light smoke in the passenger compartment. One can easily mistake this as smoke from fire. I unbuckled my seatbelts (they opened easily) and stood up on the driver's-side door. I then pulled myself through the passenger side window.

Freeing myself from the wreckage I was thinking, "This hasn't happened to me again!" When I hit the ground I was amazed I wasn't injured or feeling that bad. I had some small cuts on my face and arm from the glass, and my shoulder and back were a little sore. I scrambled up the embankment and awaited the emergency vehicles. I was very fortunate that I wasn't killed. Although I had some difficulty with a pinched nerve in my neck, I did not miss a day of work.

I learned many things from these accidents. One is that airbags are wonderful and necessary. But they are no substitute for seat and shoulder belts. *A driver needs both.* Also, when you buy an automobile, obtain information about its safety features. Big is better. And drive defensively.

I recently took delivery on a 1989 BMW 750iX. I feel confident and comfortable driving it. The sticker price was \$74,000. Admittedly it is a lot of money for an automobile, but a small price to pay for the safety and peace of mind it provides.

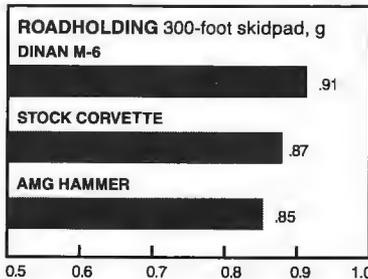
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Source: *Car & Driver*

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