NATIONAL CAPITAL CHAPTER

BMWCCA

WASHINGTON, D.C.

Der Bayerische

Volume IV No. 5 May 1974

OFFICIAL PUBLICATION OF
BMW Car Club of America / National Capital Chapter

Der Bayerische

BOX 41046
BETHESDA, MD. 20014

Editor ..... Paul Schauble (301) 434-3755
Cover ..... Rick Price
Artwork ..... Estelle Watts

Staff

Gretchen Blankenship — Jim Blankenship
Patti Cavallero — Ric Cavallero
Dave Roach — Nancy Stutsman

BMWBMWBMWBMWBMWBMWBMWBMWBMWBMWBMW

National Capital Chapter Officers

President.....	Suzie Wyban.....	(703) 979-5733
Vice President.	Nancy Stutsman	(703) 525-4094
Secretary	Denise Price	
Treasurer	Jim Blankenship	(301) 657-2178

BMWBMWBMWBMWBMWBMWBMWBMWBMWBMWBMW

Committee Chairmen

Activities.....	Ron Beavers.....	(703) 360-7212
Autocross	Ric Cavallero.....	(301) 871-1131
Council.....	Mike Leeper	(703) 491-3038
	Chet Kingsbury.....	(301) 345-2915
Membership ..	Gretchen Blankenship	(301) 657-2178
Oktoberfest '74	Ric Cavallero.....	(301) 871-1131
Racing.....	Jerry Coffey.....	(202) 223-9194
Rally	Kathy Leeper	(703) 491-3038
Serv. Rpts.....	Mel Morganstein....	(301) 384-5858
Storekeeper ..	Paul MacInnis	(301) 449-6599
Technical	Terry Wyban.....	(703) 979-5733

DER BAYERISCHE is a monthly publication of the National Capitol Chapter of the BMW Car Club of America, Inc., and is provided by and for the members of the BMW Car Club of America only. The ideas, opinions, and suggestions expressed in regard to technical matters are those of the authors and no authentication is implied by the editors. Modifications within the warranty period may void the warranty.

$5.50 of the annual chapter membership dues is for a subscription to DER BAYERISCHE. Single copy price is $ .50.

Ed. Note

WANTED

In the near future we will have severe need of the following:

* A place to type Der Bayerische. We have been able recently to use the typewriters at Dave Roache's office. Dave, however, has been accepted at American University and will begin classes in September. We will need, one night a month, access to some work space and 3 or 4 identical typewriters. If anyone knows of such a place....
* more people to use the typewriters. If we had two more typists we could finish a newsletter in one night!!! Is there someone out there who can type?????
* material, especially photographs. Anybody like to see there name and work in print???
* cheap, reasonable quality printing. Our treasurer will run the press himself if it will reduce the cost.
* a basement or garage. We are conside considering buying a printing press and need a place to put it.

COMPLAINTS

The people handling membership have relayed comments from people that "Club activities are only for a select group...." All of the activity chairmen, myself included, have been begging for help since January. If anybody really feels excluded, let me know and I will find him something to do, instantly!

Congratulations to Ron Beavers and Robert Formo for their fine performance on the WRC "fun" rally "The Baloon goes UP." Ron and Bob finished second novice.

The new Council class system is much more equitable to unequipped rallyists. There are now six classes: novice, senior unequipped, senior equipped, expert equipped, expert unequipped, and master. More people could do better if they would come out to run. Rallies are tending to be both easier and shorter because of the gas controversy. Come on and run.

$ $ $ $

April 1 Balance $380.16

	Incoming	Outgoing
Autocross	$548.00	
Autocross Expenses		$687.38
March Newsletter		69.37
March Meeting Room		26.50
Dues		
New	169.00	
Renewal	72.00	
BMWCCA Dues		83.50
Council Dues		3.05
Stamps		7.40
	$789.00	$877.20

May 1 Balance $291.96

Net -$88.20

Jim Blankenship

Member Memorabilia

New member time again. We have getting new members in rafts, which is good. Here is a raft of them. Welcome:

Ted Ibach, 11709 Riders Lane, Reston,Va. Ted has a 1972 2002.

Althea Griffin, 1206 Peach Wood Lane, Bowie, Md. Althea owns a 1973 2002.

Douglas Johnson, 4508 37th Place, Arlington,Va. Doug's BMW is a 1972 2002.

Norman Bos, 1608 32nd St.N.W., Washington, D.C. Norm's makes 3 1972 2002's.

W. E. Molloy Jr., 13401 Arden Way #32, Laurel, Md. Mr. Molloy's 2002 is a 1971.

Hugh Scruggs, Box 175, Univ. Va. Hospital. Charlottesville, Va. Dr. Scruggs has a 1969 2002.

Bill Lowell, 490 M St. S.W. #W200, Washington, D.C. Bill Lowell has a 1973 2002 Tii.

Don Hering, 674 Old Bachman Valley Rd., Westminster, Md. Don owns a 1969 1600.

Frederick & Susan Weinberg, 2800 Quebec St. N.W. #831, Washington, D.C. Fred and Susie have a new 1974 2002 Tii.

Tyler M. Knapp, 3525 O St. N.W., Washington, D.C. Tyler's BMW is a nifty 1971 2800 CS.

Glad to have all of you folks and hope to see you at the next meeting.

Gretchen Blankenship

Minutes

The April Meeting was called to order at 8:00 P.M.

For the Autocross report, Ric Cavallero awarded the trophies for the club's autocross on March 31st. The next championship 'cross is on April 21 at Montgomery Mall. This will be a trial run on this lot. Future events may be held there depending on the reaction to this autocross.

Jerry Coffey reported that BMW's made a clean sweep of the first four places in the European Touring Car Championship. Formula-2 was also dominated by BMW. A tuning manual for 1600-2002's has been put out by Motortech and is available from them.

Six new members were introduced at the meeting.

Kathy Leeper announced that the first rally of the Friday Night series will be on June 7.

Service reports were handed out by Mel Morganstein. Mel remarked that so far he has received only one service report on Motortech.

After buy and sell a short break followed.

Bob Dreyer from Modern Body Shop spoke and showed a short movie. Two other movies on rallying and the Baja race sent by Parker Spooner were also shown.

Denise Price

In Appreciation

To the Management and Personnel of Heishman BMW:

As spokesman for the membership of the BMW Car Club, I would like to extend our thanks and gratitude for the co-operation and technical assistance the Club has received from your dealership. You have donated a great deal of time and effort to our "tech" sessions, not to mention several door prizes for some of the Club's special events.

The Club membership sincerely hopes we can maintain the excellent relationship that has been established with Heishman BMW. Hopefully, this can be done by a continuing effort between the Club and the dealership.

It is very rare indeed, especially in this day and age, when an automobile dealership displays a concerned interest in the customer's needs after he has signed "on the dotted line." Heishman BMW expresses that interest and is to be highly commended for it.

Again, thanks for the help and cooperation and may Heishman BMW continue to prosper and grow.

Cordially,
Patti Cavallero
Active Member
BMW Car Club of America
National Capital Chapter

New Address

NOTICE!NOTICE!NOTICE!NOTICE!NOTICE!

The BMWCCA National Chapter has a new address. It is:

BMWCCA-NCC
Box 41046
Bethesda, Md. 20014

NOTICE!NOTICE!NOTICE!NOTICE!NOTICE!

Rally Box

The BRANDED I Championship rally saw our club fielding a team of three cars. Nancy Stutsman and Jean Frane, Dave Roach and Paul Schauble, and Pat and Bob Critchlow came out to run. All three registered early, thus had number in the one digits or teens, a wise precaution in this rally which required contestants to register and be assigned numbers by mail. The same procedure, by the way, is operative for the Corvette Club rally (May 12. See below.) As of the end of the rally, the Critchlows were our best scoring car, but since several legs were under protest, the outcome of the event was undecided. Checkpoint 11 was chased at gunpoint from its original location, incidentally; it seems the local Farmer Jones didn't want them setting up on "his land". They moved down the road after posting a 20 minute emergency

pause sign at checkpoint 10. Then about car 45 or 50, he came back again and "run 'em off" from there, too. Legs 11 and 12 had to go before the protest committee met. This is a regrettable and illegal situation which occurs occasionally. In my opinion, poor PR or not, someone should sue Farmer Jones.

For the Corvette Club rally, Dave Roach has "graceously consented" to declare teams the day of the rally. Please see Dave on the 12th if there are any problems.

The BMW Club will be providing one checkpoint crew for the Virginia Reel National Rally, July 27. Dave Roach will be the √. captain. Any experienced √. workers willing to help out should contact Dave. One of our members, Mike Leeper, is a leg OD on the Reel, quite an honor for both Mike and the Club, since out CR last year had a great deal to do with his being asked to do this. The Reel will not be an easy rally, but members with some rally experience might find it an interesting and informative experience. While it truly isn't easy, it may be a little less arduous than previous Reels.

CORRECTION: to last month's column on correcting odo error and off courses. To correct your odo, divide odo miles by official miles. Then multiply all mileages in the route instructions by the quotient.

RALLY HINTS - MAY

Checkpoints are the areas used for timing and scoring on rallies. They usually consist of 3, 4, or 5 people alongside the road with a watch, a radio, a √. sign, score cards, and maybe even walkie-talkies. There are two lines, the timing line and the "start" line. As you cross the timing line, you are timed to the second or hundredth of a minute, depending upon the rally. Check your watch as a double check for accuracy, especially for the easily goofed minute reading. Keep going to the timing table where there may be a table, a van, etc. Give the people there your scoring apparatus. On some rallies it will be a carbon of the slip from the previous √. On others it is a single piece of paper or card. You get it at the start. They will record your time in on it. They will also record your time out, the time you should leave this √., from the start line. This time will be at least two minutes from your time in and will be on the minute or half minute. They will often give out a slip explaining traps on the previous leg and giving official mileage and elapsed times (OEM, OET). If not, the official info will be on the start sign at the start line. Write it down!

To score yourself, subtract your time into this checkpoint from your time out of the last one. Compare the difference to the OET. The resulting difference, converted to seconds or hundredths of a minute, is your score. For example:

Time out √.	2	10:53:00
Time in √.	3	11:16:10
OET		20:16

Your error is 2:54. You were late.
Your score in seconds is 174.

On most rallies there is a maximum number of points you can get on one leg. It is called a "max". Usually it is 300 points or 5 minutes, but check with the generals.

It is also possible to "miss" a √. There are two ways to do this: The √. crew may be gone, in which case one arrives at √. 3 after √. 1 without having seen √. 2 at all. Most rallies do have a time limit of 20 or 30 minutes (check with the generals) over which they award extra points. The √. may still be physically there, but if the rallyist is over that time limit, he still has a "miss".

A miss is usually scored as double a max for the √. missed and blank, no score, for the next, since there is no start time from the missed √.

At the end of the rally, the scores for each leg are added together for the total. Lowest score wins.

If scoring procedures are just too much to think about on the course, don't. Wait until the end. Although score cards must be turned in, it isn't usually required that there be scoring on them. Rally masters do appreciate your efforts toward self-scoring, though.

Kathy Leeper

Activities

I'd say that from viewing the lists Gretchen publishes each month we have many new members. Club activities are the only way new members meet the old members. A monthly meeting is great if you want a meeting. But car clubs are for people who enjoy their cars and what better way is there to enjoy your car than by driving it? Now how you want to drive it can be done in either of two ways: autocrosses and rallies. Each has its own merits and in each you will find those people who like either, neither, or both.

Okay, so what am I talking about? In late March we had an autocross with a follow-up party for the workers. Now, how about an easy rally for the members to meet each other and get acquainted? I won't explain what a rally is because Kathy Leeper has been doing an excellent job of doing that in her Rally Box column. Let's say I'm planning an easy rally for the club in mid-June. Everyone is welcome. Prices will be $ 2.50 for BMWCCA and $ 3.50 for everyone else. The rally will be approximately 100 miles and take approximately four hours and 1/2 tank of gas. What a price for entertainment and sure driving pleasure. I'll have more information on the rally at our next meeting. See you there,

Ron Beavers

Positive Feedback

April 17, 1974

Dear Editor:

I thought y'all might be interested in the enclosed copy of a letter I sent to NHTSA on the proposed speedometer regulation. I worked for NHTSA's Chief Cousel's office for four months last year during a tour in a DOT legal program, and know that this proposal is likely to be implemented. Last time it was proposed, public comments strongly favored it. With so many worthwhile projects available to them, I'm sorry to see NHTSA still toying around with this incredibly sophomoric proposal.

Gary Allen

Docket # 74-8

This note is to register my firm opposition to your proposal for maximum speedometer indications. I oppose this proposal for several reasons. First, I am not aware of any conclusive showing that the current system entices drivers to drive at dangerously high speeds simply for the thrill of seeing a high value on the speedometer. Those who are so inclined will doubtless continue to do so whether the speedometer hits the peg at 85 or 120; to think that the lure of high speed can be quenched by so simple a device is simplistic thinking in its most discouraging form.

Secondly, given the proposition that some drivers do on occasion operate their vehicles at high speeds, I am not convinced that the proportion of accidents is high enough to warrant this proposed action (assuming it would decrease the incidence of such accidents is a dubious proposition). Where such accidents do occur, they are usually written off to excessive speed when compounding factors are present--poor vehicle design or maintenance, bad highway engineering, and, of course, drinking. I have yet to see convincing

proof that a skilled driver operating a properly-prepared car poses any inherent threat to highway safety merely because he exceeds the incredibly arbitrary limits imposed by various political jurisdictions.

Finally, I believe this proposal would stunt the technological growth of the automobile aftificially, just when promising design advances have made American cars more roadworthy at higher speeds. Radial tires, disc brakes, anti-skid systems, and improved suspensions in recent years can offer the travelling public enhanced levels of safety at high speeds; aerodynamic improvements combined with more reasonable body size and weight can reduce fuel consumption while allowing higher cruising speeds. Such advances will be stillborn if automakers realize their vehicles are not likely to exceed 55 or 75 miles per hour; we will be stuck with vehicles which are only suitable for crashing into brick walls with complete safety, a curious goal for a once-efficient transportation device.

By way of illustration, I currently own a BMW Bavaria--an automobile designed for continuous 120 mph operation. Because of its speed potential, the car is, by American standards, vastly overengineered in the areas of suspension, handling, and braking. As a consequence, it provides a level of driver control and confidence unmatched by cars designed for "safe" speeds; it also returns 20 miles per gallon at speeds far in excess of those currently allowed here. It would be a tragedy if other manufacturers lost the incentive to build cars of this calibre, if only because it is far more competent at legal speeds than cars built never to exceed them.

Thus I must register opposition to your proposed rulemaking, and respectfully suggest that you devote the resources allocated to this project to further your outstanding ASAP pr

Gary W. Allen

Tech Tips

IGNITION TIMING

Much has been said in recent ROUNDELS about ignition timing and unfortunately some of it has been grossly misleading. Rather than give a blow by blow, I'll limit myself to two vague generalizations and then launch into something constructive.

1. The late distributor for the one barrel 2002 is substantially retarded everywhere but at high rpm compared to the original (European) 2002 when timed as recommended.
2. According to the press releases and an eyeball check, the distributor on the new two barrel is as quick as the early European curve but is limited to 10° less total advance due to the high velocity and turbulence induced by the more efficient head design.

The main factors which determine proper ignition timing are the speed of combustion and combustion chamber shape. The speed of combustion in turn depends on the mixture (air/fuel) ratio, the type of fuel, residual exhaust gas dilution, the turbulence of the mixture charge, the cylinder pressure (effective compression ratio), the piston speed (engine rpm), combustion temperature and other factors. The causal chain could be carried further, but the point is that optimum ignition timing is inextrically tied to the complexities of the combustion process.

The effective compression ratio is far below the geometric ratio when volumetric efficiency is low, i.e., when the engine is at low rpm ("off the cam"), and/or throttled down. On the other hand, mixture turbulence and uniformity are both increased by throttling.

Raising the geometric compression ratio raises the effective compression ratio at all engine speeds and reduces the amount of exhaust gas dilution (the

smaller combustion chamber reduces the space available for residual exhaust gas). A long overlap cam reduces effective compression ratio at low rpm and increases it at high rpm (provided that the intake and exhaust tract lengths are properly "tuned" to the cam).

These are factors which are reasonably predictable, but others are often perverse. Very lean and very rich mixtures are less prone to detonation than mixtures in the maximum power range. High octane gasolines inhibit detonation because they burn more slowly - lean mixtures promote detonation because they burn more slowly.

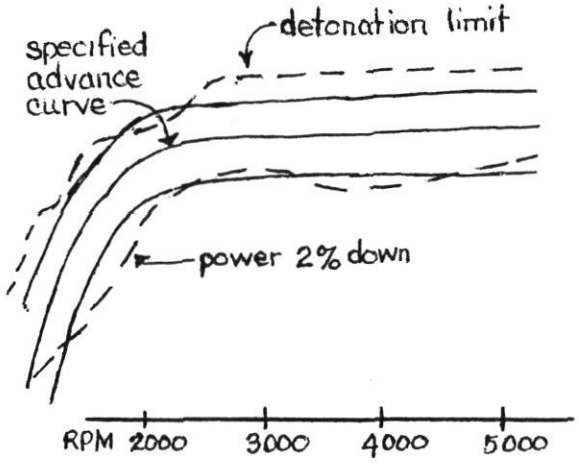
Changes which seem innocuous can have a marked effect on ignition timing. Larger and/or stickier tires increase the load on the engine (i.e. require larger throttle openings at the same rpm) and may require some retardation of ignition to achieve optimum timing. Because of the many interelated factors which influence optimum ignition timing, it is almost always determined empirically by dyno-testing and road testing. Fortunately in most engines there is about a 5° to 7° range of ignition timing which will produce 99% or better of maximum power. Since octane requirement (detonation tendency) increases directly with advance, it's a good idea to stay within the lower half of this range. Some engine designs show a markedly smaller safety range - full hemi heads are a well known offender.

The objective of a good centrifugal advance curve is to keep the full throttle power as high as possible without going into detonation. The main function of the BMW vacuum advance is to prevent detonation under acceleration caused by poor mixture distribution without resorting to excessively rich mixtures. The distribution problem here is not so much a question of richness as it is a maldistribution of high and low octane fuel fractions and anti-detonants such as tetraethyl lead, all of which have different vaporization points.

This distribution problem is also one of the primary reasons for preheating the stock BMW multibranch manifolds. Note that the stock engine will tolerate more advance than with a free flowing intake because the restrictive manifold reduces cylinder pressures and thus raises the detonation limit.

When an engine is tested on a dynamometer by varying timing and load to hold the engine at a given speed at full throttle it is possible to plot an ignition "window" or band. The upper advance limit at any given speed is either the point of incipient detonation or the maximum power timing (these two points are usually very near each other, since maximum power is often detonation limited). The lower limit is found by retarding the ignition until the power falls off by say 2%. (For comparison, 5% is about the smallest power loss the average driver can detect without test instruments.)

Such an ignition tolerance band is illustrated below. The solid lines represent the tolerance band for a typical centrifugal advance curve. The actual shape of the dotted band varies from engine to engine as well as with state of tune and type (even brand) of gasoline, but the width of the band (6-10 crankshaft degrees) is typical.



These curves illustrate a problem which actually occurred when some early 1800TI's were run on gasolines of low to moderate "octane" sensitivity and it led to the development of the "TI" distributor.

Note the critical range between 2500 and 3000 RPM. With high sensitivity gasolines there is another problem area at very high RPM. The second area is potentially more dangerous because of the high heat transfer involved, but the first is more common. This low or midrange "spark knock" does not usually cause much damage, but only because most drivers are smart enough to back off when they hear the clatter.

The dynamometer test described above has few analogs on the road, except perhaps for steep hills. With a lot of power on a level road the detonation limit is significantly higher than indicated on the dyno. The excess power is used to accelerate the car so rapidly that the steady-state dyno conditions are not approached until top speed is reached. Drag racers have known this for years - the quick cars ran with magnetos locked at the full advance desired.

The latest Formula One engines have their timing trigger on the flywheel, as do some of the latest Alpina engines - there is no ignition advance at all. Combustion timing is controlled by the designed-in turbulence characteristics of the head which increase combustion speed directly with engine speed. Terry Luxford is probably the most knowledgeable advocate of this approach in four cylinder BMW's. If you happen to catch Terry in a talkative mood and have the good sense to think about what he says, you can get a real education in the high-speed combustion process.

Jerry Coffey

For Sale

CAPACITOR DISCHARGE IGNITION

I'd like to make another group purchase of the Tiger 500 CD ignition system. If I can get over 12 people, the price will be $ 28.00, discounted from a list of $ 53.95. While the device has a normal/cd switch like the Delta Mk10B, it also has a lifetime guarantee (instead of 1 year), 75% greater peak spark current and 40% longer duration, i.e., about 2 1/2 times the power to the spark plug. It has better cold weather starting capability (3.6 min operating voltage instead of 5v). It also consumes about 40% less power and has better radio noise suppression. I'll need checks made out to me ahead of time which will not be cashed until I can order.

Mel Morganstein
2048 Seattle Avenue
Silver Spring, Maryland
Home - 384-5858
Work - 282-2298

Wanted: One 1972 Bavaria with 4-speed gearbox, air conditioning, sunroof, and power steering. Any member interested in selling such a car or who has a lead on one, please call Jeff Randall at 525-2800(work) or 869-5824(home).

Rare 1972 2002tii Touring (3 dr. fastback), 18,000 miles, purchased in Germany, USA legal, white with blue interior, radio and new tires. Mint condition, $ 7100. Call Tom at 948-8815, Mon. - Fri., 10 - 6.

NATIONAL CAPITAL CHAPTER
BMWCCA
WASHINGTON DC

First Class

P. O. BOX 2413
HYATTSVILLE. MD.
20784

Next Meeting

The May meeting will be held at the BRICKSKELLER, 1523 22nd Street N.W., Washington, D.C. between P and Q. The date of the meeting is May 21st. Our speaker for the evening will be Bill Scott from Bill Scott's Racing School.

Come early and have dinner before the meeting - they have goooooood sandwiches (especially the Brickburger!).

When you come to the meeting don't look for a sign that says BRICKSKELLER (they don't have one) just look for the red canopy.

NOTICE NOTICE NOTICE NOTICE NOTICE

The BMWCCA National Chapter has a new address:

BMWCCA-NCC
P.O. Box 41046
Bethesda, Md. 20014

NOTICE NOTICE NOTICE NOTICE NOTICE

NCC Calendar

May 12 - CCA Championship Rally
12 - LOTUS Cherished Date Autocross
19 - AJSTC Championship Autocross
19 - PCA Hectic Metric Rally
21 - BMWCCA Monthly Meeting
June 1 - Newsletter Deadline
5 - BMWCCA Executive Meeting
7 - PCA Friday Night Rally
18 - BMWCCA Monthly Meeting