



VEE LINE

NUMBER 16

JANUARY 1966

DIRECTOR'S CORNER

If you've received your copy of the SCCA General Competition Rules for 1966 (better known as the "GCR") and haven't read the section on Formula Vee yet, you don't know that it allows the *largest oversize* cylinders to be used for 1966. If you *have* read it, and didn't notice, you haven't been studying the fine print in your Bulletins. If you *did* notice--and are all shook up--relax! It's all a mistake, due to misinterpretation of a table of VW cylinder dimensions.

As originally adopted by the Board of Governors, the rules specified that the cylinders could be the "largest standard bore, plus .008", with the actual measurement to be included in the final printed version. Somehow, the measurement for the *largest bore*--the "second oversize"--was obtained, hence the "3.080".

An official correction will be issued as soon as possible, but in the meantime don't run out and buy a new set of oversize jugs--they'll *still* be illegal. The maximum bore is 3.040".

There was a somewhat similar situation in connection with the front axle, but (also due to the efforts of the Association) it was corrected before the GCR went to print. There are still some unofficial copies of the rules floating around showing that the axle must be from a standard VW Sedan "prior to Serial No. 6,000,001", which would outlaw '64's, '65's, and even some '63's. The correct figure, however, is "116,000,001", which is the serial number of the first '66 1300cc VW, which has ball-joint suspension. Actually, this number is superfluous, too, as the components are already restricted to the "1192cc" VW, which is automatically "prior to Serial No. 116,000,001".

For you Associates, and any others who do not receive the GCR, we will have the complete rules printed up as soon as all these little items are ironed out, so don't do anything on the strength of any "unofficial" versions.

Volkswagen of America has donated another copy of the film "Racing on a Budget", so, you people who have had trouble getting on the waiting list, try again, won't you?

ADVICE TO HUNTERS

Take up Vee racing instead--it's much safer. On the opening day of the deer season in Washington and Idaho, five hunters were killed.

Speaking of hunting, my partner, John Baker, is now known as "Deerslayer" in racing circles. On our last trip to the Westwood (British Columbia) track, at about five AM, a two-point buck argued with us over the right-of-way where he wanted to cross the highway. John managed to dodge him with the MG, but the deer hit the Vee right in the engine room, just behind the trailer wheel, bending the frame slightly and cracking some fiberglass. We went back as soon as we could stop, but found only a couple of small pools of blood and some hair on the road. Later in the day we found one antler in the cockpit of the Vee. I can't say he was slain, but he certainly lost his sex appeal.

Bulletin No. 5, which has the first part of the article on improving the front suspension, is again available. It has been reprinted. No. 3, which had nothing of lasting interest, will not be replaced; but it is intended that all others will continue to be available, at 25¢ each.

THE BALLOT

The ballot last month wasn't exactly vital and in view of the wonderful response we had on the rules, I can't feel really discouraged, but I wish I could report just a *little* better return. 48 out of 170 doesn't indicate much interest on the part of the 122 members who couldn't find time to make a few pencil marks and drop a postcard in the mail. I hope they will at least be interested in the results.

As you may have already noticed, those 48 people renamed the publication the "Vee Line" and chose a new emblem. I hope you all like them. Here is the final tally of the votes--

EMBLEMS

A-14, B-5, C-4, D-3, F-6, G-1, H-3, I-4, J-4, L-2, Old style-5 (4 people voted twice -- for the old emblem and one other.)

BULLETIN NAME

VeeLine-19, VeePress-8, VeePoint-13, Bulletin-4.

OFFICERS

President	Whit Tharin	46
Vice President	Vi Hendrickson	45
	Fred Sellers	1
Secretary	Harriet Gittings	27
	M. L. Mathews	18

PROPOSITIONS

Against Proposition 2	4
Against Proposition 4	7
All other votes were "for".	

Fortunately, during the past year there was no occasion requiring the services of the Executive Board. We didn't have one. A President is the only officer we've had since before our reorganization in the middle of 1964. You've seen his name here several times--Dave Tallaksen.

Although he was one of the first Vee owners, and still drives Vees occasionally in autocrosses, Dave is better known in racing circles for driving Elvas and Elans. He is one of the drivers selected by the Ford Motor Company to campaign their Ford Cortina in 1966.

His last official act as President was to tabulate the ballots in the recent election.

By way of proof that you picked some outstanding officers, the emblem contest was also won by your new President, and the runner-up was your new Secretary!

Caesar would have translated the motto "Quod Dons Quod Fron's", something like "What Gives is What's Forward", Whit says, or in more modern terms, "It's What's Up Front That Counts". Could anything be more appropriate for Formula Vee?

Your vote on sizes was overwhelmingly for 3 inches, for both the adhesive emblem and the jacket patches. One of each will be included with each new and renewal membership, and anyone who can't wait till renewal time is invited to ask for them. I can't say yet, though, just when they will be available, so please don't ask till you get the word.

A new supply of the large "FV" Class designation emblems is on hand now, however. According to the manufacturer, they are wear-proof, water-proof, weather-proof, and almost removal proof. They were formerly furnished automatically and will continue to be free, but only on request. You're welcome to them, but they cost the Association \$1.12 a pair, so let's not leave them lying in a drawer.

GOOD PRESS

Just received from Harriet Gittings is part of a New Jersey publication called "National Speed Sport News". It contains the best coverage of the Nassau Vee races (and the only full list of participants) I've seen. Is this treatment of Formula Vee typical of this paper? Comments by those familiar with it would be welcomed.

SPEAKING OF OIL -- AGAIN

"In the August Bulletin "Speaking of Oil" you imply that #10 oil with STP is suitable. Is this really true? Here in the Midwest, standard practice (legal or not) is to drastically increase clearance of bearings and pistons. Will such light oil work in this case, even with STP?"

John Boyles, Waterloo, Iowa

Oh, boy! I should just ignore this one! Well, John, this is a subject on which there will no doubt be differing opinions, so let's just consider a few points, and then you make your own decision.

First, the whole question hinges on how much you "drastically increase" the clearances. Volkswagen specifies con-rod clearances, for example, at .0007 (seven ten-thousandths) to .003 in new engines, with a "wear limit" of .006. *In my opinion*, .0007 is pretty tight, especially for continuous high speed (a rule of thumb for machine-shop practice is "half a thousandth per inch of diameter) but .006 would be plenty "drastic". The wear limit for the mains is .0075, and for piston-to-cylinder is .008, by the way.

First, let's "speak about oil" for a moment. The theory of lubrication is that oil is somewhat like a batch of well lubricated, magnetized steel marbles, the marbles representing molecules of oil. Imagine dumping a bunch of these marbles on a rug (representing a bearing surface) and then stepping onto the pile. It would flatten out readily, at first, but by the time it got down to two or three layers deep it would get pretty resistant. You could no doubt work it down even further, to one layer thick, which would be embedded in the carpet and wouldn't roll very easily. Two or three layers of the lubricated marbles would be pretty slippery, however.

Oil works much the same way. Regardless of the clearance in a bearing, a layer of oil flattens out under pressure to only a few molecules thick which does the actual lubricating. Increasing pressure further flattens the oil film, and when it reaches the point where molecules of bearing metal start poking through, lubrication ceases. The "magnetized" molecules resist this final separation to a remarkable degree, which is the reason for oil being a lubricant in the first place. Water is a good lubricant for pumps, etc., but won't stand up under pressure.

Now let's consider bearings in general (and this applies in a way to pistons, too). Bearings are designed to carry a given load through a film of oil between the bearing surfaces; and in determining the size of the surfaces, it is considered that the load will be carried over the entire area. If the clearances are close enough, the pressure on any one spot will be low enough so that the film of oil will not be displaced, allowing metal-to-metal contact.

Compare this, however, with a bearing in which the clearances have been "drastically increased". If this bearing and its journal were mated in a dry condition, they would make contact at only one point--actually a narrow line--with the space between them increasing on either side of that line. Even when oil is introduced, the entire pressure on the bearing, being concentrated in such a small area, may rupture the oil film and allow metal-to-metal contact. As speed increases oil has a tendency to "slide" into the wedge-shaped space and between the contacting members, maintaining some lubrication; but the *clearance at that particular point* will actually be much *less* than in a bearing with *less overall clearance* (thus less pressure on any particular spot) in which a thicker film of oil can be maintained.

Bearing clearances, then, in excess of the thickness of the oil film that can be maintained can actually result in *less* clearance where it counts--where the load is. As a practical example, step in a puddle of spilled oil, which may be as much as a sixteenth (.062) of an inch thick. Even though the pressure per square inch under your heel is but a fraction of that in a bearing, you will note that most of the oil has been squirted out, leaving only a very thin film. (Be careful--that is the portion of the oil that does the business.)

We've been talking about bearing theory in general, where the load is in one direction. In the case of con-rod bearings--or better yet, wrist-pins--there is another factor to be considered, also. On bearings such as this, with a reversing load, the pressure is, of course, transferred rapidly from one side of the bearing to the other. If the clearance is such that an actual supporting oil film is maintained all around, this transfer takes place smoothly, with little or no relative movement; but if there is an actual space, even though it's filled with oil, the excess will be squirted out until the minimum film thickness is obtained (as under your heel). There is actual movement, then, between the bearing surfaces, and a certain amount of shock when that movement is halted.

With either a constant or reversing load, a heavier oil will provide a better film, being slower to "squirt out"; but for this very reason, it contributes a certain amount of friction, too. If clearances are being increased to reduce friction, and a heavier oil is used to offset the loose bearings, any gain could be cancelled out, and from a purely mechanical standpoint it could be inviting trouble. So, if you're having bearing troubles, in spite of increased clearances, consider the possibility that they may be *too* great.

Volkswagen states that their cars can be driven wide-open indefinitely, right off the showroom floor. Granted, there is a difference between the 4000 RPM a sedan may attain, and the 5000 you're after in the Vee, and new VW engines *have* been known

(Continued on Page 3)

CLUE TO A MYSTERY

If we hadn't had a clear plastic fuel line between the pump and the carburetor, we'd still be puzzled. The first time we had Petunia on a dyno we got good performance up to about 4800, but couldn't get 5000, even with no load at all, which was why we were there in the first place. We soon noticed that at about 4800 the flow in the clear fuel line changed rather suddenly to almost a solid stream of bubbles. A search of the entire fuel line failed to reveal any source of air leaks, and the new fuel pump diaphragm we'd just installed looked good; but the bubbles were definitely there, and were causing the trouble. Just on suspicion, because the trouble wasn't so noticeable before the pump was rebuilt, we decided to install another diaphragm. We checked "the book" again, in case we'd missed something, and sure enough we had. We found that there is a definite reason for the special VW fixture to which the pump is supposed to be screwed while it is being assembled--it has a little gillooley on it that depresses the lever 14mm while the cover screws are tightened. Being fresh out of special VW fixtures, we set a 14mm hex nut on edge, pushed the pump down over it with the nut under the lever, and clamped the pump in place with vise-grips while the cover was installed. If this is not done (we found), the diaphragm is pulled down too far, pulling the edges in toward the center of the pump. This tends to wrinkle the fabric (which would cause leaks); but even if this is avoided (as we had done), the screw holes in the fabric are oversize, and can be pulled toward the center enough, apparently, so that they are not entirely sealed when the cover is tightened in place.

Why there was no reverse leakage of fuel, and why there was no air leakage at lower speeds, we have never figured out. There is still an occasional bubble, at any speed, due either to a minute air leak somewhere, or perhaps to separation of absorbed air in the suction side of the pump, but it causes no trouble.

So if all else has failed, check your fuel pump at top speed, under full load. This just might be one of those "Little Things".

UNCLASSIFIED ADS

BOBSY: professionally built, only 3 races. Debugged, better than new. BRG, R-2's. Fast, legal, good handling. \$2,200. Change in job won't leave time for racing, Peter Tulli, 6329 Summer St., Philadelphia, Pa., or call (215) SH 7-0364 after 6.

The VEE LINE of the Formula Vee Association

Don Cheesman, Director
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(Speaking of Oil--Again)

to seize up; so to be on the safe side it might be a good idea to loosen up a brand-new engine a bit. As for me, I'll go along with VW's opinion that .006 is drastic enough. If I could get a brand-new engine all I'd do in the crankcase would be to install the oil baffles, and I'd use #10 (or some of the new 10-20-30) with STP; but if I had one that rattled I'd use SAE90--and hold my breath. And I could get a lot of argument on it, too; so you suit yourself.

NON-PROTEST INSPECTION

The San Francisco Bay-area Vee owners have not yet worked out the details, but they're considering an idea that might well set an example for Vees everywhere. In principle, every Vee owner entered in a race agrees that (1) one of the first three cars (to be picked by lot) will be torn down by a competent mechanic, and (2) each entrant will pay his share of the cost.

This sounds like the basis of a heck of a good idea. It does not involve any protest fees (or any of the ill-will generated by a protest) and does not infringe on any of the duties or responsibilities of the race officials. It shouldn't be expensive--you'd be amazed at how quickly an expert can open up a VW engine! Keep us posted, Harriet?



Harriet and Dale Gittings

Harriet is our new Executive Secretary, but wanted Dale included in the picture as he's the other member of their Vee team. Harriet does most of the track racing, Dale autocrosses and keeps the car in shape for both.

Dale built the car in 1963, and they've been racing ever since. Harriet's ambition is to come in at least third, just once. Racing is more than just a hobby with her--she also (besides the Vee-news for the local enthusiasts) writes a weekly racing column for the local daily paper and does other free-lance sports writing.



Your Director, with the shovel he uses for putting this thing together.

REST IN PEACE!

In Canada, South Africa, Australia and the United States, Formula Vee is firmly established under identical rules. In Europe, however, where most of the previous "inexpensive classes" have been born--and died (you'd think they'd have learned, by now)--there is already a separate "Formula Vee". Porsche, which imported the first Vees from the U.S. last Spring and has a bit of influence in racing circles there, explains that the 1300cc engine will be used in Europe because "the 1200cc Vees have made a very slow impression" and "it is very difficult to distinguish the two engines, and with the Europeans always prepared to cheat, practically every engine would have to be torn down after the race, whether it was really a 1200cc, or 1300cc."

Will everyone who thinks they've eliminated cheating please stand on his head? Let's start a pool--the member who comes closest to guessing the date when they switch to 1500cc wins the pot.

All bets are off! The day after writing the above item I received this letter--

"Dear Mr. Cheesman:

I enclose herewith my application for membership in Formula Vee International. I am one of the founders of the Belgian Formula Vee (association) and I would like very much to be in your club, too....

Over in Europe we are having the 1500cc engine fitted in all the cars for Belgium, Switzerland, Germany, and Holland. (*The writer is the European distributor for the Autodynamics--don.*) Could you let me know if the Amon Beach car which won at Bahamas....had modified rear rims on their wheels? And could you spare a picture of the exhaust manifold of that car? It seems to be quite special, too....

*Andre Pilette
Brussels, Belgium"*

Do I hear 1600? This would be funny, if it wasn't so pitiful. Even in Europe, this breaks all records for killing off a class before it even gets started. I am trying to obtain a copy of the European "Vee" rules (if there are any) just for laughs.

Somewhere in the translation into European languages, the basic thought underlying Formula Vee seems to have been lost entirely. That seems to be the only possible explanation, inasmuch as in the English-speaking countries it is precisely that concept which has been responsible for the enthusiastic acceptance of the Formula. In Europe the reaction seems to be more like "Man, here's

a car with untouched possibilities for improvement! So let's improve!" It must be admitted that there were, for a time, a few isolated cases of this disease in this country, too, but it seems to have been stamped out. Let's make sure this latest outbreak is confined to Europe, where, as before, it will run its course in a year or so and die out for lack of new victims.

Mr. Pilette, by the way, is more than welcome to join this Association--as an Associate Member. An Active Member must be the owner of a legal Formula Vee.

EMPI GIVES UP HARD

Probably one of the best recent indications of Formula Vee's status is EMPI's reluctance to part company with it. You will recall that EMPI made quite a splash in West Coast Vee circles last spring with their Autodynamics, which was conspicuously fast. It developed, however, that their "race-prepared" engines were, shall we say, questionably legal, and the Camber Compensator they were using was declared illegal; and not long afterward they announced that they were giving up Vee racing in order to avoid competing against their customers. (Besides VW hop-up goodies, they are also the West Coast distributor for Autodynamics.)

Mourning was very brief among the Californians, though there were some comments that the mainspring in EMPI's Vee seemed to be running down anyhow, before they quit, as cars they had been trouncing suddenly started winning again.

Next, EMPI started running their Autodynamics as a straight Formula B. Its hot performance was at first attributed to the substitution of a Porsche engine, but they quickly announced that it was only their "stock" VW engine, modified with EMPI goodies to nearly 1600cc (the limit of Formula B).

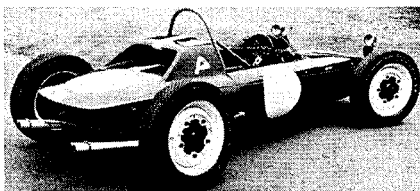
Here's a more specific description by Bruce Deutsch, their Public Relations head, as quoted in Harriet Gittings' newsletter--

"The engine is still VW, and has two EMPI power kits added--the "1600" and the "Ram Induction", converting it to Formula B. EMPI would prefer to call it Vee Modified, and they hope that Vee owners will accept the new car as the prototype for a new Class.... Only as a last resort will the Formula Vee Modified owner need to fall back on the EMPI catalog for its well-known bolt-on power kits."

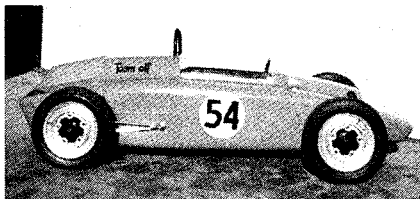
Do you suppose they could have some ulterior motive in trying to promote such a class?

Being strictly another Formula B car, as they say, I can't see, myself, that it needs another Class name. However, if it does, I suggest to SCCA that it would be only fair to call it the "EMPI Class".

But NOT "modified Formula Vee"!



Here's the latest thing from Auto-dynamics. There was no propaganda accompanying the photo, but it pretty well speaks for itself, doesn't it?



Here's another car not yet widely known outside its home area-- "Der Elf", built by Curry-Cameron Engineering, Rialto, California. This is the only car for which complete plans and instructions are available to the builder who really wants to start at the bottom. The car is also available at any stage in construction, as are any of the parts. The frame is probably more rigid, torsionally, than any other Vee built.

1500?

This is third hand, and not even recent, but will bear passing along-- a rumor that 1500 heads have been spotted on some Midwest cars. This is a little hard to believe, as they are so obvious they can hardly be missed. If the manifold curves back toward the center of the engine and enters the head at an angle, it's 1500. And while we're on the subject, rocker arms having either two cross ribs on one side, near the center (or marks showing that they've been ground off) are also 1500. They'll fit perfectly, open the valves a little wider, and get you disqualified if they're spotted. And they're easy to spot.

TRANSFERRED

Major Don Evans has sold his old blue Formcar to Warren Bennet, of Santa Fe, N.M. Those on the East Coast probably remember it, as do those in the Pacific N.W. Don campaigned it quite successfully in the East before the Air Force transferred him to Albuquerque. All last season it was in the hands of Don's brothers, Bill and Ernie, near Seattle. Except for a couple of races when Don came up north and drove it, it wasn't too spectacular on the track (except once, when it spun out and John Baker took the rear end out from under it); but the autocrossing fraternity will be glad to see it go--it's had more TTOD's than any other car in the area, no matter which of the brothers drove it.

COME ON IN

"Gentlemen, or Sir, or Whatever: (Try "Don")

I'm darned sick and tired of having 1 or 2 cars out of a dozen go 8 seconds a lap faster than the rest of us and still be legal (?).

If your organization gives tuning tips and the like, I am interested in joining.

Please send me pertinent information.

Fred H. Stout
Webster Groves, Mo."

Wow! 8 seconds per lap! I would agree with you that something is wrong! However, as many of us have found out, it may very well be in your own equipment. How are these leaders doing when they get out of their own territory? Do they terrorize the opposition or do they eat a little dust, too? If they weren't the Divisional (National) champs last year, that's a clue pointing to trouble a little closer to home.

Joining this association-- even following all the suggestions in the Bulletins-- isn't guaranteed to get you kissed by the trophy girl, but in your case, I think it is safe to say it will help. So come on in!

OPPORTUNITY KNOCKS

Another of those long-distance calls from President Whit last night. There was a lot of idle chit-chat-- on his nickle --but several items you'll be interested in, too, especially if you live in the Southeast.

He's on both feet again, after his Nassau accident, but one of them is still in a cast. Says his leg will be back to normal long before his shoulder will. Because of this he doesn't expect to do any racing this season, but that doesn't mean he's giving up driving Vees, by a long shot.

His ambition for this year is to see a lot of new cars up in the front ranks-- particularly cars carrying FVI emblems, and he'd like very much to conduct "clinics" at the various events, to help get them there. As runner-up for first place in National Points in 1964, National Champion in the SE Division last year, and a practicing engineer, he's probably the best candidate for an instructor you'd find anywhere.

He'll test out your Vee and suggest ways you can improve it, watch you drive and point out things you can correct, discuss your engine problems with you, and do everything he can to lower your lap times. He says "obsolete" Formcars are his specialty-- that's about all he's ever driven.

While the only definite date at this time is the Driver's School at Bainbridge on February 19, he will also be at the schools at Savannah (his home course) and Spartanburg. Watch for the dates. Not only that-- he says he'll go to any school or Regional race (no Nationals, please-- they're too crowded) within a day's drive of Allendale if (1) there will be six to ten members who want help, and (2) they'll furnish his room and board while he's there.

This is an opportunity you couldn't buy. Write or call him, at Allendale, S.C. (If you can't round up enough members, sign them up.)



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