



VEE LINE

NUMBER 32

MAY 1967

DIRECTOR'S CORNER

It's about time! A Vee was protested in the East for violation of the body rule, and while no penalties (except a reprimand) were assessed, the protest was upheld. In itself, this is insignificant, but it may be insignificant like a seed. What kind of vegetation it will produce is not yet certain, but look for some recognition — and correction — of the inadequacies in the present rule. The ambiguous wording has been used as an excuse for almost total disregard of the rule in some cases, and one deviation has encouraged another until at least half of the major builders are violating the spirit of it, at least.

Most likely, the rule will not be *changed*, but it may very well be spelled out in such detail that several models of Vees will have to be changed. It can be argued that a buyer would naturally expect that the car he gets from a recognized builder would be legal — and it certainly should be! On the other hand, there is no excuse for a Vee owner not being familiar with the rules, and obviously some of the bodies are so questionable (shall we say) that a buyer should certainly be aware that he is taking a calculated risk, at least.

Another VW distributor has expressed interest in supporting Formula Vee in his territory but is a little uncertain about it after reading my remarks in this corner in the #31 VeeLine. I'd hate to have him — or anyone else — take anything appearing in this corner as an official stand on anything — it's purely self-expression. In principle, I'm for anything that will help Formula Vee, and I'm sure that most of us consider money helpful. My point was that I'd rather see it spread a little thinner and farther than just among the top three or four or five drivers in an area. That's my opinion — what's yours? Let's have some comments! If this particular offer doesn't happen to apply to your area, there may be one soon which does — this sort of thing is contagious!

HERE WE GO AGAIN

"Dear Don: . . . In one of your publications I read of someone bemoaning the possibility of the 'blue-printed' engine becoming a prerequisite for FV success. I can't speak for the rest of the U.S. but here in the NE Division it is already fact!

"If you were to survey the top ten finishers in most NEDIV Regionals and Nationals, you would find that 80% are running a Barr, Junemann, Whittier, or Cassis engine. As a point of record, one of the National point contenders is reliably reported to have \$1000 in a *legal* engine. If there are those out there in never-never land who think this is impossible, believe me, it is not. How many have balanced every moving transmission part, the axle shafts, and even (believe it or not) the lug nuts.

"As FV fields grow, and as greater numbers of well prepared cars show up on the used market, I am sure that this sort of preparation will become commonplace and will become *the* factor in FV success. Let's face it, these cars *do go much* faster.

"Then there are those who feel that a good driver can overcome a preparation disadvantage to a point. At the NEDIV Regional at Reading there was a 24-second *per lap* difference between the fastest and slowest qualifiers in a 30-car field. . . . Anyone who expects racing competitively to be cheap is playing the wrong game — it costs money to win. And most of the 'budget-special' drivers who do most of the complaining shouldn't be racing in the first place. . . ." Joe Herman, Neptune, N.J.

Joe, you hit a nerve! If there's a "budget special" more budget than Petunia, anywhere, it has to be strictly from-the-wreck-to-the-Vee! In over three years of racing, not a dime has been spent on "preparation," unless you count two \$10 sessions on a dyno, which turned out to be worthless. I'm not including routine maintenance, though that has been very limited, too; I'm speaking of the same kind of "preparation" you're discussing.

I wouldn't argue with anyone who wants to donate \$1000 to someone for working on his engine (though there are probably more deserving charity cases), but I would hope to encourage those who are beginning to believe that kind of propaganda. Neither would I argue that there is actually *no* difference between cars or drivers, but I'd like to encourage those who think the *only* difference is money to take another look at the situation.

I don't doubt for a minute that there can be 24 seconds a lap difference between cars at any given race. There are always one or two new drivers who couldn't keep up, even if they had all the EMPI goodies in their car; and there are still some owners who are following the VW Owners Manual to the letter — running with the latest carb and

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THE BALLOT

Checking the ballots is always interesting. The written-in comments are right to the point! This time the majority of them were various versions of "Let 'em go to Formula C!" though there were also a couple like "We want unlimited mods."

The 229 ballots returned weren't up to our usual standard, being almost 60% of the 380 sent out. Let's be doing better next time?

The vote was surprisingly close, as you'll note in the tabulation, though a closer check will indicate that only 70 of the 229 would actually participate in a 1500cc class if one were established. The opinions on modification are surprising too: of those voting for a new class, over a third want it with more modification than is presently allowed. It was impossible to tabulate all the indicated modifications; but under "More," most of the suggestions were for modified or unlimited cams, or for two carburetors, larger manifolds, etc. There were also three suggestions that if a new class were formed it should be a class of "Sports Racing" cars, based on the 1500 engine with the present rules.

The "Camber Compensator" seems to be gaining acceptance: for the 1200cc class, the vote was For — 85, Against — 119, Unmarked — 25. It was generally the same for the 1500cc class if one should be established.

Should an additional 1500cc class be created?

Yes	No
102	127

Would you race in it?

Yes	No	Yes	No
68	31	3	124

What modification would you want?

Less	Present	More	Unlimited	Unmarked
8	51	27	27	2

(Comments on the "No" ballots were not included here.)

Hardly unanimous, is it — on any point? If you were the SCCA what would *you* conclude?

I can't say I'm disappointed — I haven't got the 1200 licked yet, by any means, and I'm not about to start on anything else.

ANYBODY HERE SEEN KELLY?

Apparently I've been giving the wrong address for Wayne Kelly, who builds the Canadian "Kelly Vee". Anyone know the correct one?

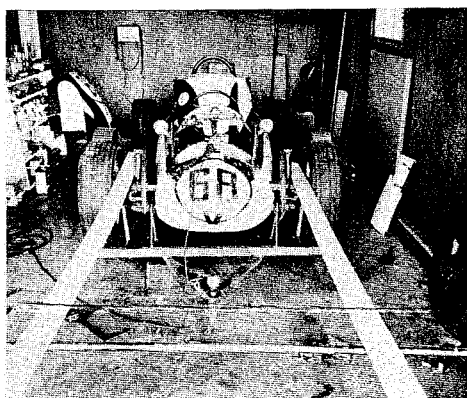
TOE-IN

Here's one method for adjusting toe-in, which may not be the best, but it beats trying to measure across under the car with a tape, at least. Two straight boards are laid on the car's suspension at one end, and on a sawhorse or other support at the other, held against the tires, and the distance across them (to the tire sides) is measured at two points. Identical measurements, of course, indicate no toe-in, and a difference in measurements indicates how much. It must be remembered that normal toe-in of 1/16" to 1/8" is specified at points roughly a foot ahead, and a foot behind the center of the wheel, or at spots about two feet apart. If you measure at spots four feet apart on the boards, then, the difference will be equal to twice the measurement at the wheels.

In the picture, our trailer has yokes into which the axle tubes fit, to prevent motion of the suspension when towing. They're also handy for chores like this. The suspension is blocked up to normal running position, with the tie rods level. To make this check on the ground, the driver (or an equal weight) should be in the car.

Tires are very seldom exactly true, but it is easy to find a neutral spot between the "high" and "low" spots, where the boards are parallel to the line of the wheel. Mark it, and turn the wheel half a turn. If the tire is again parallel to the wheel, you're set. This method works on the rear end, too.

(How do you like these front tires?)



AUTOCROSSING

Have you tried autocrossing your Vee? It can be very satisfying because you not only have a chance of winning your class, if there are other Vees present, but also of taking the fastest time of the day. On a long airport course the larger cars come into their own; but on the average parking lot course, they haven't a chance against a Vee. Bill Gilbert sends results of a couple of events in Oregon, where Vees beat out a Lotus S-7 and a Spitfire for the "big" trophy. Bill Evans, of Renton, Wash., and Joel Naive, of La Jolla, Cal., are among the habitual winners. (In Joel's area they started restricting the events to licensed cars, so he installed the necessary lights, etc., and got a license!) Even Petunia got a "TTOD" the other Sunday.

WHO, ME - CHEAT?

As was mentioned in the Director's Corner, it's amazing, sometimes, how people can find - or invent - loopholes in the rules. I'm sure the people who are guilty don't intend to really *cheat* - they're just being smart and taking advantage of all their opportunities, or something. They have the answers to prove that they're lily-white - but one wonders if they really believe it themselves.

At a recent National, one of the competitors was noted to be running with an 8-blade fan. That's right! Not satisfied with the minimum 16-blade model, he had modified it (the only possible description) by removing every other blade. He didn't see it as a modification, (he said) but as "removal of a cooling duct component," which is of course legal. Can you see a fan blade as part of a cooling duct?

At the same race, there was a car which has been suspected for some time of running an illegal cam. This suspicion was heightened by a mechanic apparently somewhat associated with it, who is said to have remarked that the rules permit polishing and balancing; and that if it happened to be done on a cam-grinding machine, that wouldn't make it illegal! Would you buy that?

Neither of these cars was protested, possibly because the one was an out-of-state visitor, and the other hasn't yet been competitive enough to confirm suspicions, but at least the one obviously in violation should have been.

POLARITY

According to the Champion Spark Plug Co., more coils than you would believe are improperly connected. There's a right way and a wrong way; and the wrong way, while it may not detectably affect performance, could result in an occasional miss at high speed. If the polarity of the coil is reversed it is said to require 30 to 40 percent more voltage to fire the plugs.

Detection is simple - you just hold the spark plug wire back from the plug to make a spark gap, and insert the point of a pencil in the middle of the gap, forming two gaps. The spark leaving the pencil lead will have a definite "flare" on one side, indicating the direction of the current flow. It should be toward the plug.

Now that I think of it, we had Petunia checked with one of those "TV" analyzers once, and the operator (who wasn't very familiar with its operation) *thought* the polarity was reversed. Having more faith in Volkswagen than I did in him, I never checked this, but maybe I'd better. It would be difficult to check at the plugs, but a lead could be pulled out of the distributor, a stove bolt or equal could be inserted in the socket, and the gap could be created there. One of these days. . . .

The VEE LINE of
Formula Vee International
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TIRES

As was mentioned last month, Petunia is sporting a full set of 9.40x15 Goodyear R-4's. They haven't yet been used on familiar track (except once in the rain) so definite comparisons can't be made yet, but on the basis of the wet race, and one on a new track, and one autocross, some conclusions are apparent.

John says it's like driving a different car, which may be due in part to the fact that the rear suspension was changed at the same time. As was mentioned here before, those flat tires are intended to give more road contact, so the rear end was jacked up to about 2 degrees negative camber, and the limiting cable restricts rebound to about the same amount of positive. Those old Monroe springs have sagged so much and have been shimmed so often that they're getting pretty short, giving a rather stiff rear suspension now. ("Go-Kart" suspension, John calls it.) This is a complete change, then, from the Cinturatos and softer suspension, with more camber, which we have had for three years.

The car doesn't seem to "break away" at all, in the sense of taking a sudden change in direction; but at some point in cornering it apparently starts to slide, so gently that it isn't detectable at first. Recovery is equally smooth, with no abrupt change in the feeling of control. Response to the throttle is directly related to the amount used - if you're going too fast you let up a little and the rear end goes out a little farther; step on it a little more, and it straightens out. At the end of the curve it straightens out without the customary jerk. It seems that braking points will be decidedly later, too.

They're not perfect - there is a negative side, too. For one thing, even though considerable pressure (up to 100 lb.) was used to seat them on the rim (for which they were not designed, of course) a couple of them are still losing air - not enough to be noticed during a race, but inside of a week they're nearly flat. It was necessary to install longer front bolts (which also act as steering stops) in the backing plates to prevent cutting the tires on the front suspension at full lock. (This was due to the extra width, of course.) The effect of "drafting" seems to be decidedly greater, leading to some suspicion that their greater frontal area may be somewhat detrimental. And when the dealer told us that they weren't rain tires, it was the straight dope. They're not!

But we're going to keep them.

GROWING PAINS

Some of you may have noticed that your VeeLine looked different last time, due to a "typed" address. That was done on our new second-hand Elliott addressing machine. With a mailing list of well over 500 names now, including magazines, sports writers, etc., the old-fashioned way was taking too much time. Making new stencil takes time, too, so your new label may not appear immediately; but it will eventually - progress just won't be stopped.

Incidentally, there will be a number in the lower left corner, indicating the month your membership will be due for renewal.

HERE WE GO AGAIN (Continued from Page 1)

distributor, setting the ignition by the little notches on the pulley and using the next larger jet, just because they're racing. They're setting the valves by the book, and using 90W in the gear box. They're running 40 lb. of air in their sports car tires, and getting 30 miles to the gallon — but it doesn't take money to cure their ills, either.

Just what does one get for his money when he buys one of the "famous" engines? What "secret formula" is known to these mechanics alone — which can't be detected by any known scrutineering methods? Clearances? There are some who still don't believe that the Austrians at Nassau won the first three places with stock, new-engine clearances throughout; but I was there — they did. Relocating the gear on the camshaft? (That's legal?) Three years ago we tried setting the timing gear one whole tooth ahead — and one whole tooth behind — the normal location. At one position (I don't remember which) we *thought* we could detect a bit more top rpm, and at the other it *seemed* as though acceleration in the 3,500 rpm range was better; but the difference was so slight (and the gain at one end was cancelled out at the other) that we installed it in the normal position when we had to replace a rod bearing soon afterward. Balancing? Rods and pistons, and the flywheel and clutch, can be balanced at home (with the homemade devices which have been described in previous VeeLines) to within about a fifth of a gram (the filter from a cigarette).

So what else can these engine builders do — legally — to get another 5 or 8 horsepower after they've done the things you can do at home? Well, we haven't considered balancing the crank yet, or "blueprinting" it to make sure the throws are *exactly* 180 degrees apart and give the full 2.520" (*plus* the .005" tolerance) stroke; and we haven't mentioned porting the heads, or fly-cutting them to get the minimum 43.0cc volume.

I've no idea what these items would cost, but they should be within reach of most anyone who can afford to race. Personally, I would not spend a dime on the crank, but improving the heads might very well be worth the cost.

You still think they have some secret weapon for getting that fantastic horsepower from a VW engine? Well, they do — and I have one of them right here on my desk. It's a common, ordinary performance graph, showing horsepower and torque curves at rpms all the way to 6,000. There are several things about it that aren't ordinary, however.

Right off the bat, the "curves" don't look familiar, if you've ever seen such charts; instead of the ordinary smooth curves, dropping off rapidly after the peak is reached, these drift off to the right in humps and hollows, stopping at the 6,000-line only because that's the end of the chart. They could apparently continue on till about 8,000 on the same general line.

As you may have noted, I'm a bit of a skeptic, so I examined a little farther. Now, I wouldn't go so far as to say the entire thing is faked, but *both* the torque and horsepower curves *can't* be right, because horsepower is the product of revs and torque, according to a definite formula (hp equals torque in ft. lbs. times rpm, divided by 5,250) and these curves just don't conform. If we assume they originated from a dynamometer, it is only reasonable to expect that the torque curve, being relatively simple to obtain, would be the most accurate; but if we apply the formula to it, as shown on this graph, we find that instead of dropping off from 40.5 horsepower at 4,500 to a modest 34 at 6,000 (!) as the horsepower line indicates, the correct figure at 6,000 should be a whopping 50! Instead of peaking out, this particular engine's power curve should just keep going on up and up. Would you believe it?

So what *can* you believe? Well, for one thing, you can believe that anyone who will spend that kind of money on preparation is going to take full advantage of it. As most of us have found out, tuning is a sometime thing — what's best today may need a little changing for next week's race. So you can believe that one of these people won't install one of these engines and leave it just as it came from the box, week-end after week-end. He'll make sure it's in top tune for varying weather conditions; he'll probably use different tire sizes and pressures on various tracks (he no doubt keeps a "little black book" so he'll *know* what's best). And he'll be a top notch driver! If he's not, who cares who prepared his engine? In my opinion, it's the drivers who make the engine "builders," and not the other way around. It's only human to feel that you could beat Whit Tharin if you only had the engine he's using, but would any one believe that *everyone* who is using a "John Doe" engine is automatically a winner?

If you can't afford to have your gears and lug nuts balanced, or to have someone paint your engine purple and slap his name tag on it, do the things you *can* afford. Be sure your ignition timing and carb adjustments are absolutely the best you can get — that doesn't cost anything. Experiment with tire pressures, and next time you have to get a set of tires get the ones generally considered the best in your area — even if you do have a friend who can get something else wholesale. And above all, learn to drive better — even if you're driving perfectly already. You may never become National Champion (not many of us will), but you may be surprised at some of the people you'll beat!

Not to be rubbing it in, Joe, but where were those hot NEDIV cars at Riverside last December?

ALL THE WAY TO THE TOP

When Formula Vee was introduced, and several times since, it was announced that the Volkswagen organization wasn't promoting racing, wouldn't participate in racing, and just plain wasn't interested in racing. Therefore, while Volkswagen people — from dealers up to the National distributors in a number of countries — have been very helpful, it has been for the most part "under the table." VW mechanics "own" and race Vees, but the dealer doesn't know anything about it. A good part of the prize money at Nassau has been put up by Volkswagen people — but as individuals. The recent announcement

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PROTESTS

Reports of Formula Vee protests have been practically non-existent in the past year, which is probably good — or is it? True, almost without exception teardowns have resulted in a clean bill of health; but an occasional check up is good for the class, regardless of the verdict. As more and more drivers find that they are still improving, and more and more mechanics find that they can still coax a few more revs out of the engine they thought was perfect a year ago, more and more people are willing to concede that others may have advanced even farther — legally. Nevertheless, there is still some suspicion of cheating, and some of it may have some ground. However, as Don Zacharie mentions in Harriet Gittings' newsletter, "Don't directly or indirectly accuse anybody of cheating unless somebody at least tries to prove it. Unless someone actually protests the winner, he has no way to prove his legality."

Speaking of protests, I am going to take issue with the conclusion reached by a Court of Appeal last June. The actual decision is of no particular interest here, but the following statement certainly is:

"The Court considers that a protest citing the large and open-ended ('and any other non-conformity') list of violations has a strong chance of being a 'fishing expedition,' with the protestor's philosophy being 'There must be something wrong with the engine, so keep looking until you find something.'"

At the risk of being in contempt of Court, I'm going to challenge that statement! Right off the bat, according to the GCR, "Entrants or drivers. . . may protest an automobile as not conforming to the GCR. They may request that the automobile be dismantled, inspected, or any other test be made, provided that they post cash bond with the Stewards of the Meeting sufficient to cover the total expense of disassembly, inspection, and reassembly. . . ." Nothing in that statement implies that the protestor has to gamble the amount of the protest fee, that he can pick — out of the hundreds of possible violations — the particular one or ones responsible for his suspicion. It should be sufficient that he is willing to gamble that there *is* non-conformity, and for the amount of money he is required to post, he should be guaranteed a thorough examination. He should be assured that the protested car is *completely* legal — not merely that he made a wrong guess as to the illegality actually involved. He should be *entitled* to a "fishing expedition" — and he should be assured that if no fish are found, it is because there are no fish.

It is certainly to be hoped that the philosophy quoted above is peculiar only to the particular court which voiced it — and not to inspecting officials generally.

Incidentally, I've been promising to devise a testing procedure for Vees for a couple of years, now, "as soon as I can find time." Let's see — this is 1967, and I can retire in 1982. . . .

ALL-VEE RACE

Since SCCA's "suggestion" that Vees be allotted separate races, all-Vee events have become fairly common; but even so, the one to be held June 11 at Portland, Oregon, will be among the outstanding ones.

One of the attractions during Portland's famous "Rose Festival" is a weekend of sports car racing featuring the "Rose Cup Race." This is a two-heat event, open to all comers regardless of class, and is for money, which makes it one of the important West Coast events. Between the two heats, a special race or other entertainment is scheduled. This year the Vees will get this spot.

This event is sanctioned by ICSCC ("Conference") but is traditionally recognized as an approved event by SCCA, and always gets a large turnout. The Vee race this year should be a dilly. Not only the drivers from "Conference," and from the Northwest and Oregon Regions of SCCA, but also as many as 15 or 20 from California are expected. The promoters were promised several months ago at least 30 cars if they would provide a special event, and there seems to be no doubt that they will get them.

If you read this in time, and haven't been otherwise invited, and want to get in on it, contact: Kathy Warner, Registrar, 24NE Russett St., Portland, Ore. (503) 285-0913.

WELL, WHY NOT?

"Dear Don: . . . Another prevalent problem that causes a hassle from tech inspection to tech inspection is the roll bar. I own a factory-prepared Bobsy, and as you know, like other Vees this is an integral part of the frame, and as far as I can determine meets all GCR specs.

"Drivers of other makes of cars experience the same problem, depending on how knowledgeable the inspector is of formula machinery. For instance, at a race last year a scrutineer would not pass a Formcar without additional bracing, although the same car had been approved everywhere else since the 'year one.'

"I would like to suggest that the manufacturers be required to obtain a certificate of approval from SCCA for standard built-in features such as this. Time, effort, anxiety, travel and tears could be avoided if this could be done.

"Keep the VeeLine coming. It's been a great help."

Carl Closs Jr., Bethesda, Md.

That's the best suggestion to come this way in some time! Such a program would have eliminated a lot of grief in connection with bodies, as has been mentioned elsewhere, if it had been put into effect several years ago. How about it, you manufacturers - and SCCA?

ADDICT

Bob Dixon, of Everett, Wash., would have to be included on anyone's list of racing addicts. I don't believe he has missed an SCCA race in Oregon or Washington since he got his Vee, over a year ago. This year he's expanding his field of operations -

"Dear Don - It was a long haul to Monterey, but running at Laguna Seca was well worth it. Those boys are FAST. I was lapped by Biren, Herlinger, and Demele, and finally took 12th out of 18 starters. . . . I really like the new tires I bought - Goodyear Sports Car Specials, 4.50 and 5.50's.

Enclosed is an idea that Fred Eagan, one of my pit crew, had. Quite a few people look at my car when we travel. The idea is to hang a sign on the car giving basic info about it. I drafted the enclosed as a possible. . . .

See you at Shelton - Box Dixon"

His sign says -

THIS IS A FORMULA VEE

A single seat, open-wheel race car, based on stock Volkswagen components.

For more information contact
Formula Vee International
Box 291
Ephrata, Wash.

ALL THE WAY (Cont. from Page 3)

by the Reynold C. Johnson Co. (Northern Cal. distributor) that they would provide prize money was noted principally for being an open acknowledgement of Formula Vee.

No more, however! The Volkswagenwerk AG, in Wolfsburg, Germany, has made it official - they not only are aware that Formula Vee bodies cover (?) Volkswagen engines, but they approve, to the tune of several thousand dollars!

In cooperation with "Formel V Europa" they have endowed a trophy and substantial prize money (down to 7th place) to be awarded for a series of six selected Vee events in Europe!

UNCLASSIFIED ADS

FOR SALE: Londergan Vee, only two schools since rebuild. Good car for a big man, very competitive. \$1100 with trailer, or make an offer. Must sell. Bill Hildick, 524 Notre Dame, Grosse Pointe, Mich. (313) 881-9796.

FOR SALE: Autodynamics, brought up to late model specs. New Firestones, aluminum tank, seat, and belly pan. Hydraulic clutch, balanced crank, loads of chrome and spares. Never raced (work doesn't permit). \$1400. J. T. Grenman, 1057 Starboard Road, Charleston, S.C. (803) 795-4264.

FOR SALE: I have a Formcar upon which I have lavished considerable time and money. Unfortunately, in the first race while in the top 3 of a 15-car field, I locked wheels with my neighbor, flipped it, and lost a finger. My love for it is considerably diminished, and I have it for sale with fast jack, tow-bar, and spare wheels, for \$1195. Will finance and/or accept trades. Bill Buchman, Buchman Motors, 4501 S. Tamiami Trail, Sarasota, Florida.



**Formula Vee
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