



VEE LINE

NUMBER 47

AUGUST 1968

DIRECTOR'S CORNER

Well, this is the one you wait all year for. Isn't it? You did join FVI primarily to have a voice in the direction of Formula Vee, didn't you? Great! So don't fail to take advantage of this annual opportunity to express your opinion!

I've finally learned something about preparing ballots. You'll note that this year every item is a positive statement, which should make voting a little simpler. "Cheating should be allowed," rather than "No cheating should be allowed." There has been some difficulty in the past, evidently, in deciding whether a "yes" or "no" is the proper answer to the last version. Also, no attempt has been made to provide specific wording for a proposed rule. The answers will serve as information for the various SCCA groups which will consider them, but they will have to figure out the exact wording for themselves — as they've always done, anyhow.

Again, as in the past, this issue is going to be somewhat late, and SCCA has requested (note that!) that they receive the results by October 6. That means they will have to be received *here* not later than Sept. 24. That may very well mean that you will have to get your ballot in tomorrow's mail to get it counted; but, honestly now, is there any reason why you can't? How about filling it out *right now*?

As usual, Associate Members are invited to vote on this ballot, too. Presumably you intend to have a car in the future, or you wouldn't be in this organization. At least that's the way most of our members got started. Your opinion of what you want Formula Vee to be when you do attain Active status is of value, too, then.

Ready! Set! VOTE! BEFORE SEPT. 24!

HERE IT IS!

As you may have noticed, it's very seldom that any make of car is mentioned by name in these pages. Neither is any make either recommended or disparaged in personal correspondence with newcomers who ask for help in choosing a car. Mostly, I guess, because I have yet to be convinced that any one make is markedly superior to any other. There *is* one make which has been very difficult to ignore lately, though. I've been hoping that it, too, would prove to be just another Vee; but whether it's fact or fiction, it persists in making the headlines regularly. For the good of Formula Vee in general, then, I'm going to stick my neck out (though I know I'll pull it back bleeding) and discuss a single make of car. You've perhaps heard of the Zink?

OK, so the Zink is currently terrorizing the Vee circuit! And that's not a figure of speech: "What's the use? You can't beat the Zinks!" IF this is true (and is it, really?), why is it? Let's forget the myths and rumors and take a rational look at it.

In the first place, not all the races are won by Zinks, by any means; and even more to the point, not all Zinks win races. One of the largest factors in the Zink success story is the fact that, as Ed Zink says, he has sold his cars to most of the best drivers, especially in the Southeast. These cars — and drivers — are the ones which make the headlines and the reputation, and make it possible for Ed to build even better cars. "I've got the biggest racing team in the world!" he says, and it's true. Even though they own and support their own cars, "his" drivers form one of the closest "clubs" in racing. Ed attends practically every important race in the East with parts and tools enough to build a car from the ground up, if need be, and he acts as a one-man pit crew to every Zink at the race: In return, the drivers pass back information, ideas, suggestions and comments to him, which are tried out back at the shop, no matter how unlikely they may appear to be at first, and are shared with all the others if they turn out to be of value. However, these top drivers don't have *all* the Zinks. As this is written, the SCCA National Points list shows Zinks in 1st, 6th, 7th, 9th, 10th, and 13th places in *their own home Division*. So much for the "invincible" myth, then. The combination of a top driver and one of Ed's personally supported cars is certainly a tough combination. However, the car, taken alone, is not unbeatable, obviously!

This is not meant to imply that Zinks are just average, by any means, even in the hands of an average driver. They are definitely fast! Ed, and most Zink owners, claim it is due to coming out of corners faster, which (as has been mentioned here before) allows a faster speed at any given point down the straight. However, most other drivers will agree that regardless of how one of them comes out of a corner, it's hard to pass before the next one. Which leads to the general conclusion that the greatest thing about the Zink is the Zink engine.

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COMMENTS ON THE BALLOT

After counting last year's votes I stated, "Next year's ballot certainly won't have 41 questions!" Well, it hasn't — quite — but 38 questions times a possible 800 ballots — ! So PLEASE get them back as soon as possible! Every effort has been made to include every item proposed. If yours was left out, perhaps it is adequately covered by one of the others, or perhaps I just plain overlooked it. If I did, I'm sorry — it was unintentional. Some of these have been proposed before, and have been substantially approved — by our members. Perhaps repetition will gain approval from SCCA, also. Most of the proposals are fairly simple and need no comment, but a few words regarding some of the others may be in order:

1. It has been discovered that the present "track" measurement (50.7") does not fit Formula Vees — not with the usual negative Camber, at least. Simply "Standard VW" would indicate the legal parts in normal configuration, which should be sufficient, or the correct figure should be determined and shown.

2. Would permit the ball-joint front suspension introduced in 1966.

3. Late Karmann-Ghia disc brakes can be installed on the ball-joint front suspension.

4. Is blueprinting presently legal, or isn't it?

5. Special close-ratio gears are now available through some specialty houses. Some definite basis for determining legality is needed. Including the actual figures in the rules, as the Europeans do, would assist builder and race official alike.

11. Several minimum weights were proposed, but the consensus was that less than 800 lb. would have to sacrifice some strength and safety. As to the "problem" of weighing, sometimes cited as a reason for not adopting it, if the car can be weighed at all it can be weighed with the driver aboard just as easily. (I admit to some personal interest in this one. I got Petunia down to 800 lb. before I got around to weighing her — had to restore the big front battery — but just can't seem to do much with John.)

12. The 15 x 4½ wheels (VW 1500) require spacers to offset the extra "dish." They're legal in Europe on the rear wheels only.

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HERE IT IS! (Continued from Page 1)

That is probably what is so frustrating to his competitors, myself included. Even though his engines have been torn down numerous times, not the slightest trace of illegality has even been found. Beyond that, no trace of any unusual speed secret has ever been found, either! Like everyone else, I've been lying awake nights, and day-dreaming days, trying to think of something I've overlooked that Ed didn't, but couldn't come up with a single clue. Finally it occurred to me that the simplest way to find out what he's been doing was to call Ed and ask him. So I did! And he told me! You can take this, or leave it, but as for me, if Ed Zink told me he used wax pistons I'd believe him. So after some general conversation, the part you've been waiting for went something like this —

"Ed, would you tell me how to build a Zink engine?" "Sure! There's nothing secret about it." "If I ask something you'd rather not answer will you tell me so, rather than give me a loose answer?" "Yes, that's fair enough. There are a couple of figures I wouldn't want to divulge, but you're welcome to anything else." "OK, for a start, what valve lash do you use?" "Four thousandths. That's standard VW for the late-model heads." "Do you shim your valve springs?" "No, but I always use new springs." "What angle do you use on the valve seat?" "It's ground to standard VW specs." "What spark plug do you use?" "Champion L85." "Coil?" "The small silver Volkswagen one. Not the Bosch coil — it has the Volkswagen insignia on it." "Wire?" "Packard 440." "Points?" "Stock Volkswagen."

"You do CC the heads, don't you?" "You bet! We're very particular about that." "And you enlarge the ports?" "Yes, indeed." "You don't cut off the valve guides, do you?" "No, that would be illegal. I did it in the 1500 engines for Freeport, but we found that the valves are only good for about a couple of races. They don't center in the seats properly, and they don't cool without the guide to transfer heat to the head. Normally our valves will last for at least ten races in the 1200 engines. We take the guides out, of course, when we work out the ports, and put new ones in afterward." "How do you go about measuring ports?" "Well, the exhausts are about at the legal size at the outlet, so we don't touch them there; but there is a lot of room for improvement farther in, around the stem and seat. The intake ports are actually over the legal size about at the point where they branch, so we don't even polish that area — we leave the casting marks intact so there's no question of legality. We do clean them up around the stem, and toward the inlet, though."

"What venturi do you use?" "We bore them out to 26mm on a lathe. I use a scraper on the inlet end to round off the corner for smooth air flow." "What size are the jets?" "Usually 200 for the main jet and about 240 for the air correction. They vary sometimes, but they'll be right in that area." "Do you change any of the other jets or do anything else to the carburetor?" "No, not a thing, except to make sure that everything is working right. That little jet that shoots gas in from the pump is also a venturi, you know. At high speed, gas is sucked through the pump and sprayed into the main venturi through that jet. Once in a while you find a carburetor which has sticky ball checks in the pump, or an air leak, or something, which just won't tune consistently. If you want to take the time, you can eventually find the trouble, but we don't mess with them anymore."

"What distributor do you use?" "Either the VJR4 BR8, or VJR4 BR25." "Do you fiddle with the advance mechanism — adjust springs, extend the range, or anything?" "No, not a thing. Besides being illegal, it wouldn't do it any good." "What advance do you use?" "Again, it varies. It will be right around ten degrees, but may vary from engine to engine as much as 2½ degrees. Say 7½ to 12½ degrees. Start at ten, and experiment on both sides within that amount. It will be in there somewhere." "What clearances do you use on the bearings, etc?" "Within the Volkswagen specs for new parts. By that, I mean the upper limits — the maximum allowed for new parts." "You mean you take the rods apart again and mike them after they're installed?" "You bet! We check them with 'Plasti-gage.' We micropolish the cranks, which gives a little extra clearance, and we may try a new set of bearings if they are still too tight." "How about cylinder clearance?" "Well, that's one of the couple of things I'd rather not tell you. Not that it has any effect on performance, but it does have a lot to do with reliability, which I feel is even more important. We've spent a lot of time determining the best figure for this, and I'd just as soon not give it away."

"I understand you use the 'D' cam." "That's right. We always install a new cam, regardless." "Right out of the box?" "Absolutely!" "I understand that one builder is relocating the cam on the gear, about three degrees advanced." "In my book that's illegal." "Mine, too!" "I doubt that it would do any good, anyhow. We have tried advancing and retarding the gear by a whole tooth — which I wouldn't consider illegal — but we found that the factory location is best. With the cam retarded one tooth, we did get a little more torque at low speeds, but the top end suffered. Advancing it one tooth didn't do any good anywhere." "We tried it, too, and came to the same conclusions. You balance everything no doubt?" "We sure do! That's one of the biggest jobs in preparing an engine. The rods have to be balanced, not only for equal weight but so that the large ends and small ends are all equal, too."

"What oil pump do you use?" "The 1500." "What pressure do you get?" "About 40 pounds, cold. It drops off as it gets warmer, of course." "What oil?" "Any good racing oil. For our own car we use Castrol R." "Do you use baffles in the crankcase?" "Yes, we have two vertical baffles, one on each side of the oil pickup. Each one has 20 quarter-inch holes in it. It doesn't stop the oil from shifting, but slows it up so that some stays in the center around the pickup." "Do you groove your main bearings?"

"No, that would be an illegal modification." "What fan do you use?" "The 16-blade one. With all the blades." "What rings do you use?" "Grant." "Do you reduce the tension or do anything else to them?" "No. I did try a set of low-tension rings once but got nothing but trouble, so we use them stock. We use all three rings, too, incidentally."

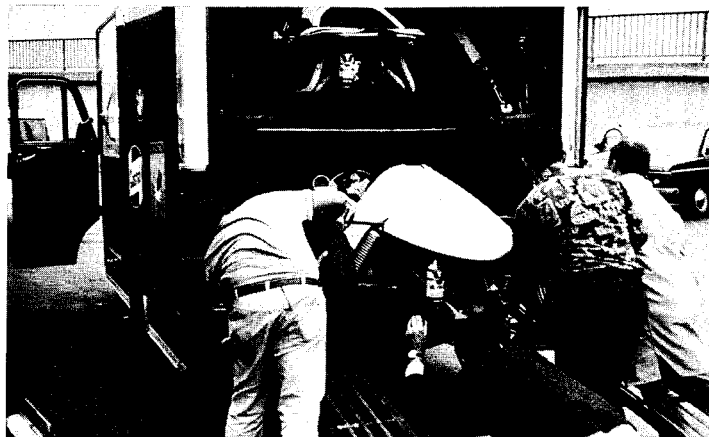
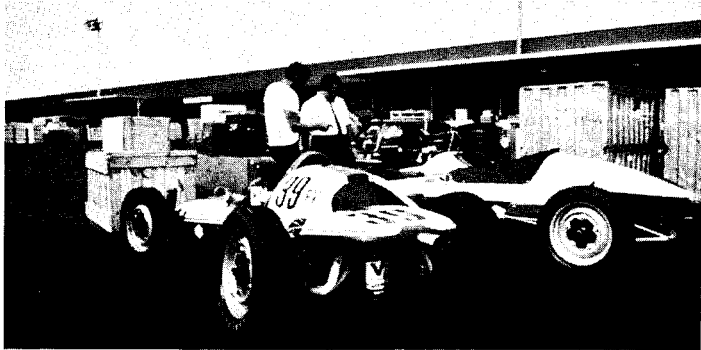
"How long does it take to build up an engine?" "Well, I have one man who builds three engines in two weeks. Incidentally — and that's the other figure I want to keep — the last thing he does, when the engine is completely assembled, is to turn it over with a torque wrench. If it takes more than the 'normal' effort to turn it, it is torn down again to find out why, and done over." "How much of that time is spent on tuning?" "It varies — usually 2½ to 3 hours." "Do all your engines end up with the same power?" "No, they don't. And I haven't been able to figure that one out, yet. They will vary by as much as two horsepower. We've torn them down again, replaced parts, used extra care, and been able to gain perhaps another half-horsepower, but some of them just won't peak out as high as some others." "You check the headspace in the cylinders carefully, no doubt." "Oh, yes! In some engines we don't need any gaskets under the cylinders, in most we use one, but in a few we may need two. Incidentally, there are two thicknesses of gaskets — brown ones and white ones. I believe it is the white ones which are a couple of thousandths thicker than the brown ones."

"What do you get for your engines?" "For an outright sale, \$625. For rebuilding your engine it's \$325, which includes a new cam, new followers, new springs and new exhaust valves. If new late-model heads or other parts are required, we notify the owner and he can either send them, or we'll furnish them at extra cost." "Don't you run into some problems with people who feel that if they don't win with a Zink engine there is something wrong with the engine?" "Well, yes, there is some of that once in a while. It's something you have to expect, though, I guess, no matter what you're doing." "How many cars have you built, Ed?" "Well, we're building two cars a week now, and I'm not sure just which ones we're working on, but it's around 75 or 76, and we're way behind in our orders."

"How does this change in the body rule affect you, Ed?" "Well, it doesn't affect us too much, really — it's the poor guy who bought one when it was legal, and now is told that it's not, who is really affected. As for us, we just changed the steel with fiberglass and replaced the rivets with Dzus fasteners — at an additional cost — and pass it on to the customers. All the cars we've sold since the first of June are legal for 1969 — at least until some other rule change comes along. I want to emphasize that I never built an illegal car. The first ones were strictly in accordance with the rule, as it was then written. In fact, when the

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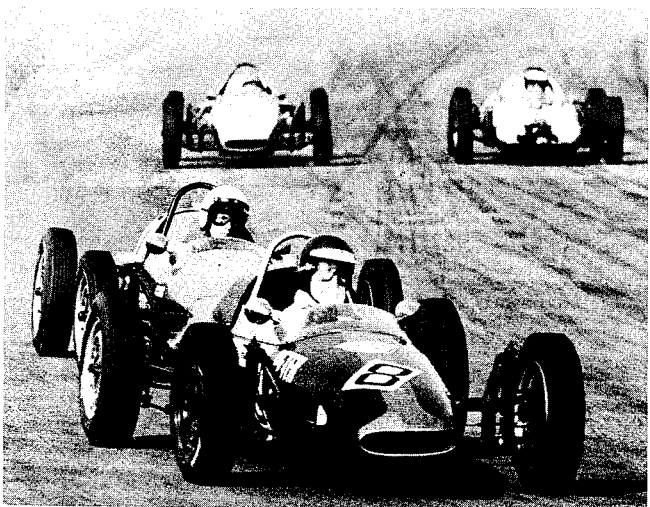
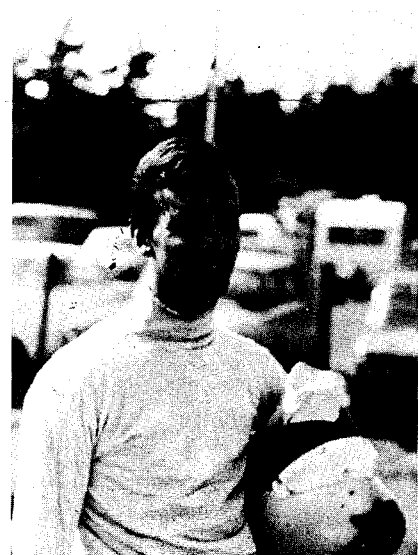
FVI GOES INTERNATIONAL - SCOTT, SULLIVAN, MAGEE IN BELGIUM



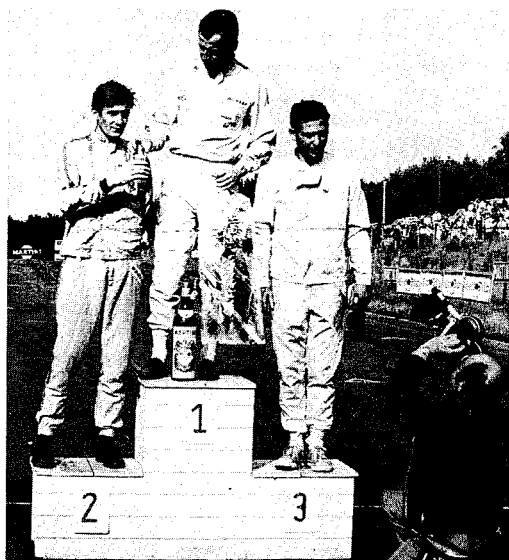
Bill Scott, left, and Joe Hoppen of VWoA check cars and parts at NY airport. At right, Jeff Sullivan, Arch McNeill (of SCCA), John Moore and a German mechanic load the van loaned by F.V. Europe.



John Magee, casts a dubious eye at his Autodynamics whose engine blew at Zolder, Belgium. Scott, fastest lap at Zolder, renews friendship with Hannelore Werner who raced Grand Bahama, while Glen Sullivan, at right, reflects on the frustration of his first-lap accident.



At left, final preparations. Peter and Pankl, nose to tail, pressed by Scott, at right. The two Austrians' domination of Europe Vee racing ended next week at Nurburging when Scott took the pole, finished second in dismal rain and fog. He's invited back by FVE for Sept. final VW Cup race at the 'Ring.



ADD ANOTHER ONE!

Volkswagen Mid-America, Inc., has joined the list of VW distributors awarding prize money for Vee races. They are awarding, for National races, \$75, \$50, \$45, \$35, \$25, and \$20 to drivers in Arkansas, Kansas, Missouri, Nebraska, and Council Bluffs, Iowa.

HERE IT IS!

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first rumbles of this thing were heard last Spring, I had one of our cars protested, and it was found legal. Then we appealed the ruling, and the Court of Appeals upheld it, again stating that the car was in accordance with the rule. It was the change in the rule which made them illegal, retroactively. The change should at least have exempted the cars which were legal when they were sold." "I couldn't agree with you more!

"So now, how about those people who are told that their cars will have to be changed?" "We have a kit, including fiberglass panels, fasteners, tubing cut to length (but not fitted) instructions, etc., for those who want to change their own, or we will rebuild the cars here at the shop. We haven't determined the actual price yet, but we *will* have to charge for it. After all, this isn't like those cars which were found in violation of the body rule in regard to coverage of the engine, length of body, etc., where it was obvious that they were disregarding an *existing* rule. This changeover is required *only* to conform to a *change* in the rules. Speaking of rules, I'm all for the rules just as they are. The *spirit* of them, that is. There are still a number of changes which should be made to close loopholes - I could build a car which would lap the present Zink by taking advantage of all the loopholes! However, I intend to be in this business a long time, if Formula Vee keeps on the way it's going. If the rule changes make cars obsolete overnight, though, Formula Vee is dead, and I'd be out of business."

So there! Now you, too, can have a Zink engine and win all your races!

**The VEE LINE of
Formula Vee International**
Don Cheesman, Director
Box 291
Ephrata, Washington 98823

UNCLASSIFIED ADS

FOR SALE: Custom built Vee, all aluminum body. New Zink-tuned engine, balanced to zero tolerance. Chromed axle tubes and backing plates. Brand new - extensively tested, but never raced. New set of R-4's, excellent set of Firestone "Indys," 2 other good tires, vast cesspool of spares, books, pamphlets. New custom built trailer. Fantastic bargain at \$1500, with trailer \$1800. E. D. Pullon, 4052 Drowsy Lane, Memphis, Tenn. 38127.

FOR SALE: Autodynamics, partially assembled. All VW components, including completely rebuilt engine. Many spares. \$1050 or best offer. Mike Montaine, 1539 1/2 Fred St., Whiting, Ind. 46394 (219) 659-1676.

FOR SALE: Beach MK 5B. \$1200. James E. Foster, 531 Albert St., Kingston, Ont. 546-5036.

FOR SALE: Early Autodynamics, completely rebuilt. Dyno tuned engine, custom trailer, 7 Dunlops on rims. Needs only courageous driver. \$1750. Frank L. Bracy, Jr., 7963 Queens Ave., Cincinnati, Ohio 45236 (513) 793-3754.

FOR SALE: Autodynamics, excellent condition. Firestone Indys, chromed engine and transaxle, lots of spares. Tandem axle double-deck Vee trailer. Complete, \$1800. Ann Purucker, 8107 Wyoming, Kansas City, Mo. (816) 523-5845.

FOR SALE: '68 Venus Vee, adjustable suspension with Armstrongs, new fast engine. Comfortable for 6'3" driver. \$2000. Trailer available. ALSO - Formcar body and frame. Fiberglass excellent, unmodified. Includes rear trailing arms, master cylinder, steering wheel. \$350 FOB. Richard W. Meyer, 7012 Sunset Rd., Sheboygan, Wis. 53081 (414) 467-6624.

FOR SALE: '66 Autodynamics. Engine balanced and prepared to legal limits, 2 schools, 2 faces. With trailer and spares, \$1300. Mike Knepper Vee, Rt. 1, Farmington, Mo. 63640. 756-2969.

COMMENTS ON THE BALLOT

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13. These 14 x 5 1/2 transporter wheels would require some pretty big tires to achieve the normal overall diameter.

17. My personal objection to "any pipes" is that not enough of us have access to - or could afford - the tubing-bending machines and engine dynos necessary to design and build a really effective exhaust system. Many who have experimented claim gains of up to 5HP are possible. Others claim it can make no difference with the VW engine, but should be allowed for "spectator appeal." With Vees increasing to the point where they're becoming a problem in some areas, and with SCCA tending more and more toward non-spectator races, who needs "Spectator appeal"? On the other side, however, a free exhaust system would be one step closer toward unification with Europe on the Vee rules.

21. The Court of Appeals recently decided an appeal on suspension along this line.

23. Recent reports indicate that the infamous "two-weekend Goodyears" have had their rubber compound changed again for somewhat longer life. So what will be next?

27. European rules permit removing the armature from the generator entirely.

31. A cast-aluminum sump is available for about \$40 - adds an additional quart to the oil supply.

FOR SALE: Autodynamics. 5 hrs. on "Cassis" engine. Firestones, Konis. A. J. Brent, Jr., 11 Bancroft Place, Fairlawn, N.J. 07410 (201) 797-6364.

FOR SALE: '63 Formcar. Well set up and reliable, but needs body work. With trailer and spares, \$800. Bruce Moffitt, 620 Santa Fe, Albuquerque, N.M. 87102.

WANTED: 800 FVI Rules Ballots by Sept. 24. Must be legitimate, but not necessarily professionally prepared. Will prepay freight charges. FVI, Ephrata, Wash. 98823.



**Formula Vee
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