



VEE LINE

NUMBER 42

MARCH 1968

MONOCOQUES ARE ILLEGAL

DIRECTOR'S CORNER

While you are reading this, a meeting of some interest to you may be taking place in New York. A "steering committee" is being formed to investigate the possibilities of coming to some international agreement on Vee rules. There will be representatives from the Vee associations in other countries, from SCCA, and from FVI. Col. George Smith is the Chairman.

As of now, only 21 letters have been received commenting on a switch to 1300cc, European rules, and other variations. Presumably the rest of the members don't care what happens — or else are relying on the power of the ballot in case they don't approve. Any recommendations would be put to a vote, of course, and SCCA has assured us that no changes will be made "unless there is overwhelming indication that it is desired by the membership."

A ballot on this subject will no doubt get almost unanimous response, but in the meantime, it is going to be a bit difficult to offer proof at that meeting of what the membership wants.

MORE FORMCAR

I'd hate to have this organization become known as a "Formcar Club," but there *are* an impressive bunch of them around, and that is the make I'm most familiar with, so it may pop up more often than any other make. If any of you have solutions to problems with other models (they don't have problems?) or ways to improve them, your comments will be more than welcome. Anyhow —

Petunia's *biggest* problem has been overweight. For one thing, I understand that the earlier models — at least the ones built in Denver — were constructed heavier than some of the later ones. Petunia, for example, has lower frame rails of 1 1/4" tubing, while I understand that 1" was used on others. Perhaps this accounts for remarks like that made by Richard Marks, of Urbana, Ill.: "Would you believe my Formcar is down to 827 lb? And I could have made it lighter!"

I hoped to be able to give a complete rundown on Petunia's reducing diet, but she's not finished yet. However, this will give you some ideas, no doubt. I'm not going to waste space on a lot of details and dimensions unless there is some indication that they're wanted, as a good deal of it is cut-and-try, anyhow.

In last Fall's efforts to "make a lady out of Petunia," as someone put it, some weight reduction was also made by substituting an aluminum gas tank, and an aluminum steering wheel shaft for the original equipment. That, and the removal of the surplus tubing around the cockpit, reduced the weight by about 20 pounds. This last attack has taken off almost 50 more.

Starting at the front, the battery and cable have been removed, and the vertical flat-bars and gussets to which the front suspension is attached were cut out.

At the rear, more drastic steps were taken. The entire rear frame, from the shock mounts and engine support mount, was cut off, and the power train is now supported a la Autodynamics, with a front engine mount. The original shock mounts were "altered" by shortening them to the vanishing point (illegal?) and new adjustable mounts are being installed, with the lower mounts being part of the new aluminum trailing arms. A Honda battery, mounted in the rear, will be used. If the scale at Pacific Raceways was accurate last Fall, and Petunia really weighed 925 honest pounds, she'll still be overweight; but a 50-pound reduction will *have* to help some. (John has been undergoing the same treatment, though with less drastic methods. He's determined to get down to 195 — from 220 — by the first race. Competitors — watch out!)

In making the transition to a front engine mount, the front one was made and installed while the engine was still on the original ones, to facilitate lining up. It's very simple, really. The mount is attached to the crossbar with a horizontal through-bolt, to permit flexing of the frame without straining any of the engine parts. A pipe spacer was driven into the tube before it was welded in, so that tightening the bolt wouldn't collapse the tube.

Next, the original bell housing mount was completely replaced, including the rubber

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COURT OF APPEALS RULES ON "FRIENDLY" PROTEST

As was reported here last month, the SCCA Competition Board looked at several Vees in January and decided that "stressed skins," "semi-monocoque designs," etc., were illegal, and presented to the Board of Governors a revised version of the body rule spelling it out. The Board of Governors, however, decided that it constituted a rule *change*, which wasn't desirable in mid-season, and referred it back for further study.

In the meantime, in order to get a decision which would be binding for the balance of this year, a friendly protest was made against a Zink; the car was found illegal by the Stewards, and the decision was appealed. This put the matter before the Court of Appeals (The Supreme Court of SCCA). This Court cannot rewrite the rules, but its interpretations of the present rules become law until they are rewritten.

In the present case, the Court met at Atlanta, examined a stripped down Zink chassis and decided that it was legal. The formal report had not yet been completed when this information was obtained, but it will contain the following conclusions:

1. The rule specifies only that the car must have a frame of steel tubing ("of a design to present no hazard. . ."). There is no restriction as to the mounting or attachment of body panels. The Zink definitely has a steel tube frame, as do the other cars in question.
2. A frame commonly implies a structure which supports the various components of the car. The Zink meets this requirement fully, inasmuch as all components are attached to frame members, and none to any "stressed skin" panels.
3. "Stressed skin" cannot be considered a violation of this rule, inasmuch as every Vee existing has panels of some kind which are, or can become, "stressed" under the proper conditions.
4. Body panels attached by mechanical means (bolts, rivots, screws, clips, "Dzus" fasteners, etc.) to a conventional steel tube frame would not be in violation of the rule. However panels welded or bonded to the frame members, so as to make body and frame a single one-piece structure ("monocoque"), would be considered illegal.
5. In this particular case, at least, the charge of "increasing costs in Formula Vee" had no validity. It was easily demon-

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FVI TOO CONSERVATIVE

Joe Herman, who wrote about a year ago in regard to the necessity of professional engine preparation for success in the Northeast Division, writes again in the same vein. His arguments are persuasive, and perhaps that is becoming one of the facts of Vee life.

He carries this theme even further, and contends that those who are able to afford those \$1,000 engines are the people who should be running FVI:

"... Don, I have a suggestion. Instead of passing major decisions to the entire membership, many of whom only race a few times a year, and some who don't even have a car, why not form a board made up of 10 drivers from each Division - name-people who are in the thick of things point-wise. They could be chosen annually from lists of Vee stalwarts and point contenders.

"I'm afraid that many of the people who voted in your last questionnaire were of dubious quality and experience. I also feel that had your questionnaire been limited to a group such as the one I have suggested, many of the areas of discussion would be markedly different. (Following is a list of 14 suggested names.) This would be a group who have been deeply involved in Vees for quite a while, and who know what Vee is all about. A vote from one of them would certainly be more significant than one from John Doe, from Bangor Maine, who doesn't even have a car.

"I think we should consider the promotional aspects and future growth of FV, more than our present situation."

Joe Herman, Atlantic Highlands, N.J.

Joe, you might be right - this is the second proposal within a month to the effect that a hand-picked blue-ribbon group of Vee "pros" would be able to guide FVI more effectively than the entire membership has been doing it. No indication has been given of the direction in which they would guide it, but the implication is that its present direction should be changed.

I'm sure you, and the people you recommend to do our voting for us, have nothing but the best interests of Formula Vee in mind. In fact, I have yet to hear of any proposal for change that wasn't made in the name of "Increased Spectator Appeal" or "Improving The Image of Formula Vee" or some other equally admirable goal. However, before I (as a member) would vote for relinquishing my vote to such a group, I'd like to know more about their intentions. Just what do they have in mind to improve the "promotional aspects and future growth of FV"? Only four of the people on your list are members of FVI, and only one of those has ever expressed any opinions on these pages.* What would your proposed Board of voters advocate in the way of change for Formula Vee? What do you advocate?

There's one little obstacle in the way of your proposal, Joe. FVI isn't like the "Book of the Month Club" - it's a regularly organized association, with officers and by-laws and a Constitution, and everything, so I can't say, "Hey, kids, we're going to have a Board to do our voting from now on. Isn't that great!" The procedure for instituting such changes is all spelled out in that little booklet you received with your December VeeLine. You present a petition signed by yourself and 19 other Active Members and it will be put up for a vote. (On such matters, the vote is restricted to Active Members, so you won't have to worry about those with no cars getting into the act.) If two-thirds of the voters approve, that's it.

The obstacle is that the incompetent people you object to having a vote on rule changes are the same people who would be voting on such a change in our Constitution, so, to be brutally frank, I don't see much hope for your proposal. I'm afraid that the stupid week-end warriors who prepare their own cars and don't even know who was second at Daytona last year - and who have made Formula Vee what it is today - will continue to have a loud voice in directing Formula Vee, no matter what.

Whether or not they approve, very few people familiar with amateur racing will deny (1) that Formula Vee has proved to be a phenomenal success, (2) that it has been a success because of - not in spite of - its restrictive rules, and (3) that the rules have remained restrictive for five years largely due to the effect of FVI as the voice of the Vee owners. The fact that FVI has been growing even faster than FV (almost doubling in size each year) should also prove something. Could it be that we're on the right track already?

By the way, before you became a member of this organization, we narrowly voted down a proposal to institute a "claiming price" procedure for Vee engines. If, as you insist, expensive engines are deciding the Vee races, it wouldn't take much to revive that proposal.

*(In the summer of 1965 we had a proposal to change the rules to require only stock bore and stroke, with any modification allowed as long as the parts were originally Volkswagen. One of your "voters" commented at that time, "... If we adopt rules which merely include piston diameter, stroke, stock VW1200 parts, and removing metal, engine prices will go up \$150, HP will increase 20%. The class will be faster, ... many who did not want to get involved in protests will now join. All of these are good aspects; ... allowing this approach may be in Formula Vee's long range best interest. ... I say - go!")

ELECTION RETURNS

It's not surprising, considering there was really no contest, that the ballot return was very light - only 115. It's also not surprising that the listed candidates won their offices. There was some slight write-in opposition, however:

For President:	
Harriet Gittings	104
Harvey Templeton	1
Whit Tharin	1
Jim Purcell	1
Jim Herlinger	1

For Vice President:	
Robert Ames	104
John Clemens	1
Glen Biren	1

For Executive Secretary:	
Dr. Ed Shantz	105
Dave Shook	1
Harold Clements	1

A comment on one of the ballots was well put - "I don't know the views of these people. How can we vote? They may be 'anything goes' 1500cc people, or strictly 'Formcar' people." So he wrote in his own slate of officers, all from the same state, and none of whom are members of FVI. However, he did have a point. Next year - earlier, if possible - there will be another election. Let's make the nominations before the election, and have some information on the views and experience of the candidates, and have a real election! Don't wait for nominations to be requested - remind me, if I don't beat you to it, by volunteering them, any time. (Bob Ames has already served notice that he is going to run for President next time.)

As to our present officers, it is probably not too late for a bit more information on them. They all are - or have been - "Formcar people." Harriet and Doctor Ed because that was the only make existing when they were bitten by the Vee bug, and Bob because he got a terrific buy on a kit which had been hidden in a dealer's warehouse for two or three years. Bob still has his, Ed flipped his last Fall and now has a Zink, and Harriet now drives a Crusader. (I believe her Formcar is still for sale.)

If "Formcar people" refers to those who believe Formula Vee is wonderful the way it is, they all qualify in that respect, too.

UNCLASSIFIED ADS

FOR SALE: Autodynamics, excellent SE record. One race on fresh engine & Good-years, 4 towing wheels and tow-bar. See April 6 at Savannah. Lt. Thomas H. Claridge, 6410 Whitehall Drive, Fayetteville, N.C. 28303 (919) 867-7650.

FOR SALE: Outstanding Formcar. One race (which it won) on fresh dyno-tuned engine. Choice of tires, newly painted. \$1400 with trailer, or will sell with school engine or without engine. Mike Boylan, 5340 Tilbury, Houston, Tex. 77027 (713) NA 1-0045.

FOR SALE: Heim ball joints and other racing goodies. Race Car Hardware, 3115-A University Ave., San Diego, Cal. (714) 283-3877.

MORE FORMCAR

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sections. The cross bar is now about $1\frac{1}{2}$ " ahead of the original location, due to the offset position of the original sheet metal VW member. No appreciable change in vibration as been noted due to the removal of the rubber, which *could* be due to a pretty good balancing job (VL #17 & #19).

With the motor supported on the new mounts, the original rear section was cut away. A new mount for the rear of the body was constructed and the position of the clutch lever and cable had to be revised. Older clutch arms had a clamping bolt arrangement, so that relocating it requires only filing a new notch in the shaft for the bolt to engage. Later models are located by a spline. The older arms will fit the newer shafts (by filing the notch) with no difficulty, but I'd have no suggestions for relocating a splined arm, other than trading it for an older one.

The new trailing arms were made of $\frac{1}{2}$ " rigid aluminum conduit (pipe) with the vertical mount support of $1\frac{1}{2}$ " conduit of the same material. The ears at the bottom are of $\frac{1}{8}$ " aluminum sheet, reinforced with a piece welded across the bottom of the ears and vertical pipe. The upper mounts are of a piece of $\frac{3}{16}$ "-wall square aluminum structural tubing, found in a junkyard, with the cap of $\frac{1}{4}$ " aluminum plate. The head of the upper bolt which holds it to the frame was built up of $\frac{1}{2}$ " steel, welded to the bolt itself so that it could be threaded, to take the adjusting screw. Mounted ahead - instead of behind - the axles, the springs are subject to more load, due to the change in leverage. New springs were installed, wound the same as the original ones, except of $\frac{3}{8}$ " steel. (The old ones needed replacement anyhow, as they had sagged and been shimmed to the point where they were bottoming.)

The battery is the largest Honda type, with a rating of 11 amp hrs. We could have saved a couple of pounds with a smaller one, but after all, it does have to start the engine on the grid. If it fails to do so, the weight saved won't do much good. A couple of studs in the frame, accessible from outside the body, will be connected to the circuit so that a booster battery can be used for cold starts without removing the body.

Weight? I don't know yet - it hasn't quite reached the point for weighing. Will let you know next month. I doubt that we'll have to install a set of air horns or a radio to make the minimum, but it will be a lot closer than it was a year ago.

HERE'S ANOTHER ONE FOR SCCA

"Dear Don - Received 'All About Formula Vee' and my copy of the 'General Competition Rules' last week and note they are still in error on the 'standard rear track' dimension. If you measure from center to center, with no camber or toe-in, the front measures the stated 51.4" but all the stock VWs and Vees I've measured (talk about some odd reactions in the paddock!) come out to about $49\frac{1}{4}$ " in the rear, instead of the 'standard' figure of 50.7 inches.

"Last summer I came to the conclusion that something was basically wrong with my 'Wee Vee.' It didn't corner well. I have always set up my toe-in using a string from the front to the rear tires. This can be done if you knew the *true* track of the car, front and rear, and apply the proper 'fudge factor.' Using the 'standard' dimensions, what I thought was $\frac{1}{8}$ " toe-in turned out to be $\frac{1}{4}$ " toe-out, front and rear, which leads to some odd handling!

"The Florida types tell me that an Austro-Vau running down there is wider than most - maybe it's just 'standard.' How about mention of this phenomenon in the VeeLine?

"What are your thoughts on the use of an aerodynamic lift surface (wing, flipper) on a Vee?"

Chris Paulhus, Acton, Mass.

Every day you learn something! I've no idea how this situation can be explained, unless there have been changes in some of the components since VW last measured one of their cars. The present ribbed brake drums add something like $\frac{3}{8}$ " to the track, I'm told, possibly to restore the

standard dimension, if it was lost somewhere along the way. I wouldn't worry too much about it, myself - as long as all the components are obviously stock VW. Perhaps the actual figures should be eliminated in future publications, relying on "stock Volkswagen" for definition. (SCCA, are you listening?) However, it's good to know that you can't rely on them for suspension line-up.

As for the "wide-track" European cars, it is their use of spacers between the hub and the wheel which has led to this myth. Actually, they nearly all use the 1500 wheels (with $4\frac{1}{2}$ " rims) which also have more "dish" than our 1200 type. They specify in the rules that the spacers *must* be used with those wheels, in order to *maintain* the standard VW track dimension.

John and I have joked about sticking some kind of a wing on Petunia, just for laughs, but I can't see "using" one, in a serious way. Incidentally, whatever happened to the Chapparals?

HAVE YOU BEEN OVERLOOKING SOMETHING?

Strangely, one of the best sources of additional power for a Vee, one of the simplest, and yet one of the most ignored, and certainly one of the most questionable from a legal standpoint, has received very little attention. At least it hasn't been the source of any controversy. I've been asked if it's legal (I don't know) and I've asked a couple of SCCA officials, who can't give a definite answer. A good many people have evidently taken advantage of it, but many more (including John and me) haven't. As far as I know, it's never been the subject of a protest, and there is some question

as to whether or not it could be proved if it were. This practice, of course, is "cc-ing" the heads.

This process is defended by those in favor (or who have done it) on the grounds that it is "blueprinting" - bringing a part up to the manufacturer's standard. Another defense is that it is permitted specifically just by being stated as a legal dimension in the rules. On the other hand, it can only be considered as an "alteration, modification, or change" of one of the components, and it certainly isn't "specifically authorized." So, is it legal, or is it not?

There's enough ground right there for some interesting argument, but now add this tidbit: Attaining 43cc could hardly be considered "blueprinting," because that is *not* the "standard VW dimension." The VW figure is "44 to 46cc." The stated 7:1 compression ratio is based on the average, or 45cc. Now is the practice legal?

You want some more? If you have one of the 46cc heads, and attempt to make a factory duplicate with 43cc capacity, you may have to actually advertise the fact. As far as I can find out, all VW heads show a machined surface around the recesses which is more or less a rectangle, of a size to include the bolt holes. However, if you attempt to take an amount from the face of the head equal to that removed from the combustion chamber, so as to maintain the original measurement for the depth the cylinder is to be seated in the head, you will end up with the entire surface machined smooth. There may be factory finished heads with that appearance, but I've yet to see one. Not only that, you'll have to forge a "VW" stamp which is placed between the cylinders on the machined surface. It's so small you may never have noticed it, but it's there. It can be duplicated, if you know how to do it. (I have an old head in the shop with 5 such stamps on it - a couple are obviously not original, but you couldn't pick the one which is.)

At least one of the better known engine experts will freely admit that cc-ing is part of his engine preparation, and it's a cinch his competitors aren't letting him get ahead on an easy item like that. It's known that a good many others are getting it done, too. If for no other reason than to combat the idea that only professionally prepared engines can win, then, I'm going to do it to Petunia, and I hope everyone else who is serious about racing will do it, too. It's one area in which all Vees are definitely not equal.

As a measure of its effect, consider the following compression ratios:

46cc gives 6.90 to 1
45cc gives 7.02 to 1
44cc gives 7.14 to 1
43cc gives 7.26 to 1

More on this next month, and for those who (like us) don't have access to a machine shop capable of doing the job, a simple hand tool which will do it. (I hope!)

BOX SCORE

Membership as of Feb. 29	654
Membership a year ago	362

MONOCOQUES ARE ILLEGAL

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strated that the Zink panel, which is merely a flat sheet of steel, rolled up at the edges and riveted to the frame, is actually cheaper than a comparable fiberglass panel.

The Court is to be complimented for coming up with a simple logical answer to a tricky question. They were unswayed by hysterical pleas to "hold the line on expense" and by tricky advertising terms such as "semi-monocoque," "stressed skin," and "torque-boxes." In my opinion there can be no valid argument against any of its conclusions. The members, by the way, were Tracy Bird (Chairman), Ed Walsh and Paul Young.

The Competition Board has not, at this time, come up with a revision of its "rule change," and it is unlikely that it will, now. It is a long-odds bet that this interpretation will not only stand for the balance of this season, but will be incorporated into future rules.

Tracy Bird commented at the conclusion of our conversation, "It's rather funny — several years ago I considered Formula Vee to be a pain in the neck. Now I find that I've become somewhat of a 'father-confessor' to it!"

ANOTHER APPROACH

The Formula Vee group in the Los Angeles area has a unique approach to the protest problem. They have set up a "Protest Club." Membership is \$10, with all but a 25¢ deduction for administration going into a bank account for payment of protest fees. They take a vote on any proposed protest, and reimburse the individual actually signing it if more than 75% of the members approve. No word yet as to how well it works out in practice; but in theory, at least, it looks good.

The **VEELINE** of
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GOOD POINT!

"Dear Don — I'm writing this letter after seeing the pictures of the Vee roll bars in the January issue. One of the cars pictured is mine. I knew the bar was bad...; that I went ahead with the design does not speak well for my consideration of my own welfare. However, equally important is the fact that my roll bar, as well as all the others pictured, passed tech for the same race at a well-known southwestern circuit, and that we all raced for an entire weekend without so much as a second look from race officials who supposedly lie awake nights thinking of ways to make our racing more safe. (And I'm glad they do.)

"What about the purpose of tech inspections? Your pictures were an eloquent expression of the ridiculous condition in which so many of us will allow ourselves to race. More important, however, they point up a gross inadequacy of so many of our well intended but poorly enforced tech inspections.

"So instead of laughing about the poor safety preparations of some drivers, perhaps your readers could be made to think of the pictures as comments on tech inspections, as well. And perhaps they can be made to feel that a little emphasis on their part can prevent such abortions from appearing on circuits. I know my problem will be corrected by race time with a bar that would do justice to a Buick Roadmaster.

"I want to thank you for running the pictures, and calling the shots as you see them. Perhaps you can see this matter in a second light and bring my comments, in some form, to your readers."

Mike Knepper, Farmington, Mo.

Thank you, too, Mike! I hope everyone else who saw them got exactly those same two points — including all the top officials of SCCA, who get this thing every month, too.

ANOTHER ONE

"Dear Don — Well, I've done it again! (The top picture, page 3, of the Jan. Vee-Line.) So what's the solution? Can I add the bar, or does the whole thing need re-doing?"

Bob Adams, Phoenix, Ariz.

Don't worry about what you'll *have* to do — what *should* you do? Your present set-up will apparently pass tech inspection, if that's all that's worrying you. Bear in mind, though, if it fails you when you need it, it's your funeral — not the tech inspector's.

RIVAL?

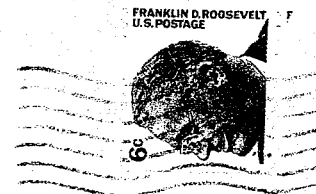
How about the new "Formula Ford"? Judging strictly from the advertisements, it, too, could become a great success. Originated in England, it was frankly intended to follow the lead of Formula Vee, inasmuch as it is a simplified version of a Formula racing car; and it is intended that the rules will keep it that way. To some extent, they have even improved on the "Vee" rules. For instance, "The only modification allowed is balancing and polishing." No polishing of ports to oversizes, no lightening of flywheels, etc. Of course "blueprinting" will be practiced, to the highest degree ("the dimensions of all moving parts must be within standard Ford production tolerances"), any final drive (quick-change gear boxes) may be used, and there are a few other opportunities for spending money. Just as there have been those who were disappointed to find that a National Championship Vee was unlikely for \$1,500, there will be those who will find that a \$3,000 Formula Ford still has room for improvement, too.

No performance evaluations have been made public yet, but with 1600cc it would appear that they'd be tough competition for a 1200cc Vee. In fact, there's not much chance that there will be any comparison. For the time being, they will evidently be racing in Formula "B," with the other Juniors.



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