



VEE LINE

NUMBER 90

MARCH 1972

DIRECTOR'S CORNER

If you've been following these pages you may have noted that Petunia is *not* a 1963 Formcar, but a 1971 one. (Which means, really, only that the top of John's helmet is as low as any other 6'3" driver's.) And we can make her into a 1973 one, complete with ram cooling and zero roll stiffness, if that's the way FV is allowed to go. My concern for the maintenance of the "spirit of the rules", then, isn't based on any personal fear that we may be forced out of racing.

I'm frankly not too concerned about the manufacturers, either. Those who have survived have been in the Vee building business long enough to have witnessed several occasions when someone went too far astray from the spirit of the rules, and was shot down, and it shouldn't come as too much of a surprise if it were to happen again.

I can appreciate that it is to the advantage of the Vee builders to come up with new ideas which *do* make existing cars obsolete, or at least outdated, since the market is somewhat limited and may have reached the saturation point as far as total numbers is concerned. Their objective, naturally, is to sell cars to those who already have them, as well as to newcomers, and if that results in a glut of used cars on the market, obsolescence is one good solution. (As one of them put it, "At least 1/3 to 1/2 of those 2000 Vees are unsafe or hopelessly non-competitive and should be retired to Solo I events or local autocrosses.") It's not a good solution for those who have those cars, however.

My concern, then, is not for Petunia's future, nor for that of the manufacturers. It is for the couple of thousand Vee owners who race for fun, and who can't afford to replace their cars regularly and don't have the money and facilities and experience for constantly updating them in order to stay in the game. It's for the newcomers, recent and future, who have heard and believe that they are safe in getting into Formula Vee, even with a used car, because it is a class which they can depend upon to continue indefinitely without change.

This class is now going into its ninth year, with no appreciable changes. Let's go for nineteen!

CONTAGIOUS?

There are a couple of new concepts in the rules for other classes this year which might have some effect on the Vee rules for 1973.

First, you may have noticed that last year the Pinto engine, as well as the original Cortina engine, was legal in Formula Ford. Evidently there was some significant difference in performance, if not in size, because this year the cars with the later engine will have a weight handicap of nearly 50 pounds. (930 lbs. minimum as compared to 881.6 for the original engine.) If 50 pounds makes that much difference in Formula Ford, just consider a 100 pound difference in the overall weight of two Vees!

Equalizing the "power to weight ratio" is certainly in line with our "weight with driver" proposition!

Some of you will remember when a "claiming price" was suggested for Formula Vee (engines, only). It was pretty well received on our ballot, but never got any further. However, the new "Showroom Stock" class, for small sedans, includes that concept in one of the very few

rules. Any competitor can "claim" one of those cars by offering \$500 over the POE list price, plus tax and license fees. *That* should discourage expensive "preparation"!

Anyone care to revive a "claiming price" for Vee engines? Setting a fair price would be somewhat difficult, and should take into account the fact that a \$1000 engine right out of the box is worth a lot more than that same engine after a few races, when it's ready for another rebuild. What is it worth at that time? Perhaps such a price should be based on that figure, but not go into effect until all owners of those engines have had a chance to get the full benefit out of their last rebuild. Let's have some comments, and some suggested prices if you want to include this on our ballot.

The VEE LINE of FORMULA VEE INTERNATIONAL

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MEMBER'S SOAPBOX

"Dear Don—I agree with your philosophy that since a Vee is an all-out racer anything should be allowed as long as it is cheap and easy to do. I would like to suggest a couple of things I have not seen in VeeLine in the year I have been a member.

"Why not allow removal of the hubcap clips and reversing the wheels? The increase in track width should improve stability, especially in the rear swing axle.

"I would like to see allowing 12 volt electrical parts and *requirement* of a stock VW battery. Chokeless VWs are hard enough to start anyway, and many Vees use garden tractor batteries, etc., which have no hope of starting the engine. The necessary pushing causes a bad situation on the grid and puts a strain on one's good nature after helping push half a dozen cars in the pits. The increase in weight could be figured into the minimum.

"I don't know whether it is considered legal to fill in the holes when the choke is removed but I would like to see it specifically allowed.

Art Delagrance, Sykesville, Md."

Whoa, there! If I ever said anything like that, I take it back! I have said that cheap and easy things might be allowable, but on an individual basis—that is, adopted as legal on an individual basis for each item. That word "anything" covers too much territory!

You'll find hubcap removal and plugging of the choke holes included in these proposed rule revisions, along with a number of other "cheap and easy" items which are common practice, but are presently actually illegal.

Wheel variations have been voted down so many times there is no point in bringing it up again. Even use of the 1300 VW slotted wheels was slipped into the rules against our ballot recommendations. (71% voted against them on our 1968 ballot.)

Twelve volt electrical system were voted down by 67% on our last ballot, so there doesn't appear to be any point in going through that again, either. We can start Petunia (most of the time) with a little Honda motorcycle battery, though we have had to push her a couple of times. In this part of the country, if you can't start on the grid without help, you wait until after the race has started to be pushed, which discourages push starts no end. In the pits it's legal, of course, but when you figure you've done your duty you can always be busy checking your timing, or

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MEMBER'S SOAPBOX

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something, when the next car needs a nudge. As for the chokeless carburetor, try pumping the throttle vigorously while you're pressing the starter button.

"Dear Don—I was given four slotted VW wheels. Can I legally use them on my Vee? Jerome Thorpe, Tacoma, Wa."

Yes—if they have the VW stamp, and are stamped "4Jx15". Look between the bolt holes. These are wheels from a VW 1300, and have been legal since Jan. 1971. If they're stamped with anything else, they're good trading stock but no good for Formula Vee.

"Greetings: Concerning the fan-belt tightness thing, I suggest testing the tightness simply by turning the generator pulley with a sparkplug wrench and requiring that it be possible to turn the engine one complete revolution this way. This would not only keep the belt tight, but would also beat the wise guys who grease the things. It might also kill off some of those oversized rubber bands that are now being used.

"Concerning oil filters: If we can have a "standard Vee cam" (a very good idea, incidentally) why not a "standard Vee oil filter kit"?

"Kindly set down anything breakable you may be holding before you read this: I think Vee is due for an engine change. The current engine is overdeveloped and overexpensive and can't be restricted to make it cheaper without obsoleting thousands of engines. I don't have an engine in mind, possibly a 1500 or 1600 Beetle, but I'm kind of hoping VW will come across with a rotary. The idea is to go back to the original Vee concepts for the new engine and severely restrict modification. Use both the new engine and the current ones, using ballast to equalize the two. A long time ago somebody came up with a "claiming price" for the engine. The idea was smitten on the spot, but you pointed out that it could come up again. OK, consider it up, for the new engine.

"How can I extend the body to the centerlines of the tires without shrouding the suspension? One of those rules is dumb!

"Have you ever heard of anyone successfully towing a Vee behind a VW, without a trailer?

"Concerning tires, I wouldn't ban racing skins, but why not legalize street tires? Most Vee people are just out to have a good time and this would reduce the cost for them. Surely a street tire could tolerate Vee speeds.

"One more thing that ought to be illegal is that out-of-production transporter third gear that everybody wants. I heard a guy say he has one and wouldn't part with it for a hundred bucks. I've heard of people paying even more to have one custom-made by a machine shop.

Curt Fredrikson, Chicago, Ill."

You've got some good ideas, there, Curt

—especially your belt-tension-testing procedure. We'll include it on the preliminary ballot.

Don't count on that "SCCA FV cam". It would take someone really dedicated to the idea, and in a position to push it, to get that one over. However, if we can get the "cam check" included in the rules, that should do it, just as well. Maybe if we spell out FILTER like that, so no one will get it confused with "cooler" as they claim to have done last year, we can get that accepted this year, too.

I believe it was Boyd Hough who towed a Vee on a trailer behind a 1200 Beetle, all over the Southwest, but I haven't heard of anyone using a tow bar. Why would you want to? Just for openers, you'd have to change tires (you wouldn't want to tow on your racing rubber) rig up lights, and in most states have a regular license for the car. Check, too, to see if fenders are required.

Your engine change is interesting—even with the same modification there was no obvious difference between the 1200 and 1500 at the last Bahamas race, where both were used. A 1600, strictly stock, might just be about equal to the present Vee engines. But a rotary? That doesn't even exist yet? By the time it would be available at the local auto wrecker's, I wouldn't care.

I wouldn't worry too much about that transmission gearing. The difference between the ratios of the obsolete transporter gear (1.22:1) and the current one (1.26:1) is only 3.3%. Do you think you could tell the difference? (It's rumored that some of the hot dogs are going back to the sedan third, for more acceleration.) I can understand the statement that someone wouldn't take a hundred dollars for one, though—that's about what it would cost to get it replaced in the transmission.

I agree—a body to the centerline of the tires would HAVE to shroud the suspension. Unless you could argue, again, that "shroud", or "fair-in", is too vague to be enforceable. That's what this rules revision thing is all about—we're hoping to get some of those "dumb" rules changed!

I'm saving the story of how you acquired your Vee for another issue, when there's more room. It has to be shared!

"Dear Don—Let us consider the common practice of cutting the carburetor float free from its lever arm to eliminate fuel starvation in sweeping right hand turns. I have not seen anything mentioned to date on this common and necessary practice. Also, I recommend allowing rotation of the clutch actuating arm on its axis of rotation to an alternative position, to permit its actuation by cable or hydraulic means.

"Oh yes—rotation of the carburetor 180 deg. on the manifold sometimes requires additional hardware to be added to actuate the butterfly. I think that this should be specifically allowed in the rules.

Dan Kaljian, San Francisco, Cal."

The carb float modification was described in the #36 VeeLine, and has been legal since 1968. Technically, modifying the ARM (straightening it) hasn't been specifically authorized though. Good point! And so are your suggestions for the clutch arm and carburetor linkage. We'll include them in these proposals. These are precisely the type of thing we're trying to cover. We probably will still miss a few items, but every contribution like this cuts the list down.

"Dear Don—You have made an erroneous statement which I think should be corrected by printing this in the next VeeLine. The "Shadowfax" has never been protested so I could not have been "pleasantly surprised when it was protested and was not declared illegal under the existing rules" as you said in the February VeeLine.

"The inference in your statement is that I built the Shadowfax while believing that its construction was probably illegal, that I was trying to "get by with something". That is not so. I knew at that time that the rear suspension was legal and I know that it is legal now.

Harvey Templeton, Winchester, Tenn."

OK, Harvey, I'm sorry. My memory is evidently faulty, and I'm happy to retract my statement and present yours. You did tell me, though, didn't you, that there had been SOME kind of controversy as to whether or not your suspension was "shrouded away from the air stream" by the fan housing?

"Dear Don—Round two! First, about your answers to my questions on last month's rule proposals:

"1. The reasons I think the proposed rules, as originally worded, would make most present Vees outdated or obsolete are: (a) body dimensions (your suggested revisions in the Feb. issue would eliminate most of the problems), (b) the rear suspension wording would make the new Caldwell's definitely illegal, (c) although I would like to go to 800 lb. and 1000 lb. with driver and fuel, I think this would make a lot of cars heavy and somewhat obsolete, or if weight is removed to get down to 800 lbs. it can make them dangerous unless the person doing the modifying knows where and how to remove weight.

"2. I do not agree that the class cannot remain "amateur" and still leave some room for inventiveness. As yet, I can't see the "zero roll stiffness" idea, horizontal shock mounting, or other rear suspension as being any better than the Z-bar, or possibly the cable set-up ... The limiting factors appear to be tires and the swing axles.

"4. Your revised wording on the steering is much better. My interpretation of the original wording was that the steering arms couldn't be moved at all (bent).

"5. Your revised wording on the body dimensions is OK.

"6. I agree that the present rules allow all kinds of direct cooling. (Yes, I have thought of several ways to cool the engine without a fan but don't intend doing it—I don't think it is in the "spirit" of the rules). To avoid the problem of ducting, slippery fan belts, etc., why not require the original VW fan belt to be run ... in conformance with the VW service manuals?"

"One thing I would like to see is the allowance of wheelbases to 86" and lengths to 130". I don't have any problem with the present length, but if you don't specify a minimum, you should allow longer ones than present, also.

"About the rules in the Feb. issue, I have no real objection that I haven't made before. I do like the clarification on the venturi, choke holes, butterfly screws, etc.

"Will probably have some more comments next month.

Bill Hoyer, Montesano, Wash."

I doubt that we're going to agree on everything, Bill, but we're getting closer, anyhow.

I don't doubt that an 800 lb. car COULD be unsafe, but I don't believe that an extra 25 or 50 or a hundred pounds would necessarily guarantee a safe car, either. As you say, the builder would have to know what he was doing—in either case. We had Petunia down to 800 once, before we got around to weighing her, without sacrificing any vital parts, and could probably do it again if we'd eliminate all the extra fiberglass patching in the nose. I don't quite get that part about "weight with driver" making "a lot of cars heavy and somewhat obsolete". Some of them would have to be made heavier, to be sure, to offset light drivers, but with the ballast bolted in, and removable, where's the obsolete?

Vees are getting pretty well developed, but there is probably still room for inventiveness without actually changing the basic principles of the car. As I've mentioned, perhaps this "Zero roll stiffness" development ISN'T all that serious, but even if it should be allowed, where DO we stop? Let's have some alternatives, since the wording of the present rule obviously can be twisted to allow almost anything you can dream up. If you think the rear suspension should be "free", let's spell that out, so that everyone sees it the same way.

There have been several suggestions on fan belts. I believe the way it is written leaves fewer loopholes than merely specifying how tight it should be.

If any car could use more leg room, it's Petunia! I've tried to push that proposal a couple of times on the ballot, but the last time only 53% of those voting wanted the 86" wheelbase, and 56% went for more overall length, so there's no point in going through it again. What we're trying to do is to cook up a set of rules that we can get approved unanimously (or very nearly) by this organization. I'm trying to include

only items which have had in the past (and hopefully will have this year) at least a two-thirds majority approval. I doubt that anyone will ever build a Vee appreciably under the maximum dimensions for length, wheelbase, and track, but if you think we need minimums, we'll include those, too.

MORE RULE PROPOSALS

We're getting into the heart of the subject this time, covering cooling and engine preparation. You'll find a number of new concepts here—or rather new ways of saying what we've thought we were saying all along. There are a couple of actual changes, like 34mm for the exhaust port, instead of 33, (because most heads have an area larger than 33mm, in stock condition), restricting balancing to the parts which actually need it (to reduce the cost of professional preparation) and permitting a slight amount of combustion chamber reshaping (it's being done, anyhow, but there's presently no way of checking it).

If there's anything you don't understand, or which you could read more than one meaning into, or which you don't like, speak up now, or forever hold your peace! Let's make every effort to make these rules undebatable! OK, there will always be some debate as to whether or not they are right, but there shouldn't be any debate as to the meaning of any rule.

NEW OFFICERS

My apologies to you all, and to the new officers, especially, for the delay in announcing the results of the Election of Officers. For some reason, having a choice for every office didn't increase interest in the election any. In fact, we got the poorest return in our history! Of the 497 ballots sent out, only 203 were returned—41%! This would be considered phenomenal in most organizations using a mail ballot, but it's the first time we've had less than a 50% return on any ballot!

The decision was surprisingly close for all three positions, and for Secretary it took a third recount to determine the winner. Another first—for the first time, last year's Vice President was not elected President. Burt Richmond, shooting for the top in his first appearance, beat out Rick Bell decisively.

There was no "party line" of any kind—the votes for the two presidential candidates were quite evenly divided between those for VP, and those, again, were evenly divided between the candidates for Secretary.

President: Burt Richmond, 113; Rick Bell, 87; and No vote, 3.

Vice President: Tom Tomlinson 105, Jerome Thorpe 88, and No vote 10.

Secretary: Bob Boyd 99, John Heine 98, No vote 6.

If you want to get in touch with your officers, their addresses are: Burt Rich-

mond, 111 E. Wacker Drive, Chicago, Ill. 60601; Tom Tomlinson, 3215 N. Talbot, Erlanger, Ky. 41018; and Bob Boyd, 920 Pendleton Drive, Canby, Ore. 97013.

SUGGESTED REVISION OF FORMULA VEE RULES

(Continued from last month)

5.10 ENGINE

C. Manifold may be mounted on either side of the fan shroud.

1. Heat riser and cast aluminum heat exchanger shall be removed.

a. A brace not more than 1 inch in width may be installed between the center section of the manifold and the crankcase, and between the carburetor flange and the fan shroud. Welding is permitted.

2. Metal may be removed from the interior of the manifold, provided the stock outside dimensions are not exceeded. (Downtube, at 2.5" below carburetor flange, 1.132" dia. Horizontal tube, 0.994" dia.)

D. Electrical system components shall be 6 volt.

1. The battery shall consist of not more than three cells, mounted in a single case, with a rating of 6 volts.

2. The generator armature, brush holders, field coils, and voltage regulator may be removed or any other means may be used to regulate generator output.

3. Any standard VW distributor may be used.

E. Cooling shall be primarily by means of the standard fan and fan housing for the above specified engine, or a fan and/or housing from any earlier model VW 1200 engine may alternately be used.

1. The fan belt must be capable of rotating the engine through one complete revolution, at any time, when the generator pulley is turned.

2. The fan housing may be drilled for screws or bolts, passage of throttle linkage, etc., and may be trimmed to fit crankcase, if necessary. Roll bar bracing may be passed through the fan housing, or the housing may be indented to fit braces or frame members, provided the overall shape and size are not altered.

3. The fan may not be altered or modified.

4. The standard fan throttling ring may be used if operated normally by the thermostat, or if used in a fixed position. No regulation of the cooling air is permitted from the cockpit, but externally adjusted shutters, etc., may be used, and may be attached to the fan inlet.

5. No ducts, baffles, deflectors, louvers, or scoops are permitted below the lower edge of the standard cylinder cover plates, except that the standard deflectors between the cylinders and

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SUGGESTED REVISION OF FORMULA VEE RULES

(Continued from Preceding Page)

pushrod tubes must be in place, and non-directional holes may be incorporated in the belly-pan, if one is used. Horizontal areas of the cylinder cover plates may be trimmed as desired but depth may not be altered.

6. No liquid may be carried on board other than the normal supplies of fuel, oil, brake fluid, battery fluid, and tire sealant.

F. Heads may be modified within the following limitations:

1. The ports may be modified as desired, except that:

a. The inside diameter of the intake port from a point at and including the bottom diameter of the valve seat to the junction between the port and valve guide, and from the intake manifold face to a point in the port 1 3/4" from the valve cover seating surface (measured on the plane of the manifold face) may not exceed 29mm (1.142").

b. The exhaust port and valve seat may not exceed 34mm inside diameter. The diameter of the seat at its bottom edge may not be greater than the diameter at any other point.

c. Valve guides of stock dimensions must be installed in stock configuration.

d. Any gasket, or sealing compound, may be used between the manifold and head.

2. Combustion chamber volume in the head (not including headspace in the cylinder) shall be not less than 43cc. The following modification is permitted:

a. The cylinder may be set deeper in the head by machining the seating surface provided original configuration is maintained.

1. The machined surface shall remain a single plane.

2. No portion of the head may extend into the cylinder.

b. Clearance between valve heads and ends of combustion chamber may be equalized provided the maximum length of the combustion chamber does not exceed 3 5/16" at the cylinder seating surface and it is no longer at any other point. No "overhang", "pocket", or other modification of the combustion chamber shape is permitted.

c. Sharp corners of head material peened over the valve seat may be rounded off, but peened surface must be kept identifiable.

d. Recesses for head gaskets may be deepened and clearance for the top cylinder fin may be machined.

3. Valve seats may be ground as desired (within the limits of F. 1 a and 1 b) except that such reseating may not extend into the metal surrounding the seat, and the surface of the valve head, at its circumference, may not be lower than the surrounding surface of the combustion chamber.

4. Valves must be standard 1200 VW as furnished for 34 bhp engines.

	Intake	Exhaust
Diameter:	1.235-1.245"	1.175-1.185"
Length (including caps, if used):	4.385-4.417"	4.393-4.425"

a. Seating surface may be reground at a single angle of 44 to 46 degrees, and stem ends may be re-faced. No other modification is permitted.

b. Valve springs may be shimmed as desired.

5. Valve train components may be modified or shims may be used in order to attain normal valve movement as specified in the Scrutineer's Handbook.

6. Devices for restoring spark plug threads to stock configuration may be installed.

7. Sending units for a temperature indicating device may be installed.

8. Any rocker arm shaft stud may be used.

G. Cylinders shall be "standard" size, 77mm nominal diameter. Maximum in-

side diameter 3.040", including 0.008" allowance for wear and/or honing. Crankcase end may be machined, or shims may be used between cylinder and crankcase, to attain 0.039" minimum headspace (top of piston to top of cylinder at TDC).

H. Connecting rods may be reconditioned, provided the distance between wrist-pin and big-end bore, without bearing inserts, is not less than 3.530".

I. Crankshaft may be reground to standard VW undersizes for the 34 bhp engine. Stroke, maximum, 2.525".

J. Crankcase may be:
1. Drilled and/or tapped for threaded plugs in oil passages, thread restoring devices, oversized bolts or studs, and/or an oil temperature indicator, and such devices may be installed.

2. Line-bored to dimensions for standard oversize VW main bearings and standard VW cam bearing inserts. No machining of mating surfaces of crankcase halves is permitted. Cam bearing inserts may be installed in any case.

3. Fitted with baffles or windage trays, contained entirely within the case.

4. Vented only into a catch tank of not less than 1 qt. capacity. Oil filler breather assembly may be modified. (Note—Engine and transmission may be vented into a single tank of 2 qt. capacity.)

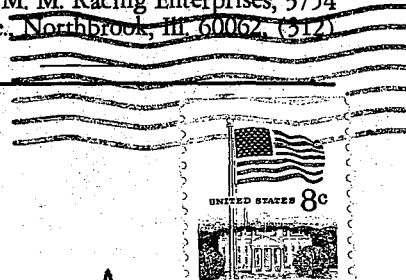
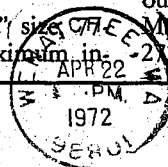
5. Modified to reduce oil loss through the breather. Baffles may be installed in the generator support.

(To be continued next month)

UNCLASSIFIED ADS

WANTED: Formula Vee, located within 500 miles. Consider car needing work, must be reasonable. Pay cash. Chuck Haines, 5846 Glen Hill Drive, Bethel Park, Pa. 15102, (412) 833-1584.

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