



VEE LINE

NUMBER 94

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DIRECTOR'S CORNER

Frank Schultheis has gone over to the Other Side! His letter (printed elsewhere on these pages) is the most complete presentation of the Other Side's attitude on rules that I have ever seen concentrated in one place, summing up in a few words all the arguments ever conceived against adopting a set of rules which would leave no room for debate.

This is not to single out Frank as The Enemy — it's the sad fact that his letter only spells out the feelings of many of the SCCA officials. "By pinning down some of these items, a number of cars . . . could become truly illegal . . .", ". . . let the class police itself . . .", ". . . the way the rules are currently written we have an unenforceable situation . . . is it really necessary to prevent such a situation, or should we leave this alone?"

There is a segment of the racing fraternity which sees racing as competition in two separate fields. Success on the track is only a by-product of success at rule "interpretation". There is a certain admiration for a competitor who can find a loophole and take advantage of it, especially if it is done skilfully enough to avoid detection. If he's caught, but can successfully defend his position by any kind of absurd argument, that's acceptable, too. Rules, then, shouldn't be so concise that they would interfere with this type of inventiveness.

There is reluctance, to the point of refusal, to revise any rule which is being bent by "leading competitors". It is considered unfair to compel any of them to get back into line once a few of them have stepped out of it. For some unexplainable reason, there is equal reluctance to acknowledge the fact that a rule is being ignored and revise it to fit existing practice. As a classic example, it took seven years to get the rule changed so that everyone in Formula Vee could *legally* run with no-charge generators, even though it was common knowledge that the "leading competitors" were using them almost from the beginning.

We have, then, three types of preparation, and three classes of participants in racing — "legal", "smart", and "cheating". Absolutely no one condones crude cheating, of course, but the prevailing feeling in regard to "legal" drivers seems to be something like condescending pity — if they don't get "smart", they deserve to run last.

The theme of Frank's letter — and the attitude of many officials — is, "Why should we penalize anyone by pinning down the meaning of the rules?" Entirely ignored is the fact that, either way, *someone* is going to be penalized. If the present situation continues, the "legal" drivers will be penalized by either having to spend time and money trying to keep up with the "smart set", or by running cars with excess frontal area, inferior suspension, power robbing cooling systems, etc.

The question, then, is not, "Why should any one be penalized?", but, "*Who* should be penalized?" It's as simple as that!

DIRECT DUCTED COOLING

There has evidently been some confusion in regard to "direct ducting", "direct cooling", etc., as it has been discussed on these pages. Those terms, as far as I'm concerned, at least, have been used only to designate cooling systems which would by-pass the fan, utilizing scoops and ducting to conduct cooling air directly from the sides of the car to the cylinders and heads, aircraft fashion. It has NOT referred to the current practice of ducts or scoops directing air into the normal fan inlet.

That practice has been going on a long time—in fact the first Autodynamics *bad* to have ducts extending to the back of the ventilation opening to keep them from burning up. Many of them were even at-

tached directly to the fan housing, in direct contradiction to the rules, but no competitors complained out of sympathy and understanding of the owner's problem.

If you will read again Sec 5.8 (Feb.) and 5.10 (Mar.) you'll note that such ducting is specifically authorized. Further than that, it would be permitted to be attached directly to the fan housing or to any other part of the car, rather than to only the frame or body as at present.

The "intent" (if I may use the word) is to prevent uncertain means of cooling which would provide more power at the expense of reliability. If some drivers are allowed to risk burning up an engine in order to dispense with a power loss at the fan, everyone who wishes to be competitive will have to follow suite.

THIS IS IT!

This is the issue you've all been waiting breathlessly for, I hope—the one with the ballot, for expressing your opinions on the proposed rule revisions.

It was mentioned last month that this would be a multiple choice ballot. It is, but with a bit of a twist. Please vote "Yes" *only* for the answer you prefer for each question. *In addition*, if there is an answer which you wouldn't accept as part of the final draft, vote "No" for that one. Please do NOT vote "No" merely if you dislike an answer—vote "No" **ONLY** for an answer which would absolutely prevent you from approving a final version of the rules proposal if it were included.

Please keep this thought in mind: It is, of course, impossible to compile a set of rules which would please everyone, so in the inevitable compromise everyone will be able to find something not to his liking. The purpose of this ballot is to find out before the final version is presented just which items are most likely to please most people, and which ones might keep our final vote from being impressive if they were included. So, please use your "NO" votes sparingly. Use them *only* for items which you absolutely could not bring yourself to accept in the final version.

Please DO remove the little "plugs" from the back of the card—completely—before sending in your ballot.

Please DON'T, if you wish to change your mind or correct a mistake, use stamps, Scotch tape, or anything of that nature, to replace the little plug. A little dab of glue or rubber cement is OK, but anything stuck onto the surface of the card catches on other cards, comes off in the computer, and generally jams up the machine, making a tough job out of an easy one for John and Jinny Morris, who have again offered to process our ballots.

As usual, TIME is important! In order to get these ballots counted, the results combined into the final version, and that one voted upon, they **MUST** be received here no later than Sept. 2.

If you simply can't get yours returned by that time, forget it!

The VEELINE of FORMULA VEE INTERNATIONAL

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WEIGHT WITH DRIVER

Apparently there is still some misunderstanding about "weight with driver, 1000 lbs." Let's go through it again, then.

First, note that this proposal would include not only the driver, but his equipment, also. It was based on the idea that the cars impounded at the end of a race (often the first three) would be weighed just as they come from the track, before other inspections were made. They would be driven onto the scales and the drivers wouldn't even have to get out. What could be simpler?

Now, as to how it would affect various drivers:

1. A car-driver combination weighing less than 1000 lbs. would have to use "ballast" (in the form of either equipment or steel plates) to attain that weight. A good many cars are somewhat overweight already, so this would not affect *all* "light-weight" drivers.

2. If the proposed minimum *empty* weight is reduced to 800 lbs., as in the proposal, this would permit drivers weighing up to 200 lbs. (with their equipment) to make the 1000 lbs. minimum by reducing the weight of their cars as required, down to that limit. Any driver weight over 200 lbs. would still be a handicap.

3. If the empty weight is retained at the present 825 lbs., as is also included on the ballot, 175 lbs. drivers, at least, could make the minimum 1000 lbs. limit, but drivers over 175 lbs. would be handicapped by the amount that they exceed that weight.

4. Reducing the minimum empty weight to 800 lbs. would have no effect whatsoever on car-driver combinations presently weighing less than 1000 lbs., since their cars would be ballasted to more than the *present* minimum, anyhow. However, it *would* increase the competition by allowing many more drivers to attain the 1000 lbs. minimum.

If you feel that you are as good a driver as anyone else, regardless of your weight, you should welcome this rule change. It would make Vee racing even closer and more interesting than it presently is. However, if you feel that you need the benefit of a weight advantage in order to be competitive, it's understandable that you would vote against it.

THE OTHER SIDE

(Following is a copy of a letter sent by Frank Schultheis to Tave Tallaksen, with copies to other SCCA officials, "leading competitors", and myself.)

"In my letter of Mar. 26 concerning Formula Vee rules, and the need to clarify them and change them for the better I had forgotten one important point—that by pinning down some of these items a number of cars would be made obsolete, would become truly illegal, and would require some expensive modifications to bring them back

into line. This, of course, isn't good for our sport.

"After many discussions with some of our leading competitors in F/Vee Category, I've reconsidered some of my suggestions—*particularly those involving body and suspension configurations—and feel that perhaps it is more proper to leave them alone and let the class police itself in those areas. And that the Scrutineer should concern himself here with the current wording of the GCR.*

"To clarify a rule is one thing, but to outlaw what is currently vogue is not the proper way to go, and I now realize it. It will be one of my primary interests to help clarify and point out loopholes, but if the Category wishes an item to continue as is, then their wishes should be catered to.

"The only item which I'm still in a quandary over is the fanbelt tension. I'm sure that the original concept of F/Vee rules wasn't to run a fanbelt so loose that engine cooling would have to be done primarily through forward facing ducting directed to the cylinders and heads. This method is now popular and has been vogue for some time now.

"To run a slack fan belt is a tricky venture and mistakes here are very costly. Conversely, the way the rules are currently written, we have an unenforceable situation, and the competitors ingenuity has capitalized on this. Is it really necessary to prevent such a situation, or should we leave this alone, also?

"This leaves only one item of concern which I feel needs consideration: The current 825 lb. minimum vs. the 1000 lb. limit with driver. I sincerely feel the latter is the most fair way and truly reflects the meaning of the first paragraph of 5.1.

"Finally, I'd like to express how pleased I was with the way the F/Vee intake port matter was handled . . .

Frank Schultheis"

Frank, to say I'm disappointed in you is putting it very mildly! How many "leading competitors" did it take to convince you that the entire "Category wishes (these items) to continue as is"? Thanks for the support for "weight with driver", at least.

Oh—and if I'm not being too inquisitive, just how WAS the "F/Vee intake port matter" handled? Seems as though it might be something a lot of Vee owners would like to hear about.

SPEAKING OF BREATHING

The intake and exhaust systems don't provide the only means by which your engine breathes—there's also the breather system which ventilates the crankcase, and which is often neglected. It has little to do with performance, but a lot to do with the appearance of your car and the condition of the track.

It's amazing how many cars (and not all are Vees, by any means) have the crankcase breather vented through a skinny little hose into a catch tank with only a few tiny vent holes in it. Some don't provide much more venting area than a salt shaker would!

The result is a build-up of pressure in the tank, and in the crankcase.

Use at least a 1/2" inside diameter hose for a vent line, and be sure that the tank provides means for the gases to escape without a pressure build-up. The venting out of the tank should be at least twice as large as that going into it. Don't let the hose stick into the tank any farther than necessary. If it ends below the surface of any oil which may collect it will blow bubbles and spray them out through the outlet.

One of the most common signs of excessive crankcase pressure is oil leakage around the crankshaft pulley. The "threaded" hub is supposed to pull any oil at that point back into the case, but if there's too much pressure inside it will blow out past the hub, regardless. Leaks at other points, too, (like valve covers) are more likely if the crankcase is pressurized. Not only that, while it's not probable that it will be considerable, any pressure at all on the bottom side of the piston tends to counterbalance the pressure on the top side, leading to some degree of power loss.

The best way to avoid breather problems, of course, is to make sure your cylinders and rings are in first class shape. The stuff which comes out through the breather is only what blows past the piston, so if you have a lot of it, that's not the real problem—it's just the symptom of the real problem.

ASPHALT DYNO

Ron Grable, in one of his articles in *Auto-week*, referred to track-tuning as the "asphalt dyno", which is a very apt description. Due to variations in air temperature and pressure at the carburetor intake between the conditions on an engine dyno and at the track, it is very likely that the laboratory situation in the shop may not actually give the very best results for the track. The real pros make corrections at the track for atmospheric conditions, using an "air density meter" and a log of past performances, so it's pretty apparent that the original dyno settings are subject to some improvement.

Eric Greenwell, an electrical engineer with Battelle at the Hanford atomic reactor works, sent us plans for an electronic accelerometer (taken from *Popular Electronics*, Sept. 1968) which should make track tuning almost as much of an exact science as dyno tuning. With this device it would be possible to determine the effect of adjustments at the lower speed ranges, where they affect acceleration, as well as at the top end. Most of us, at the track, can only rely on the tach to detect improvement (or lack of it) at the end of a long straight. Another very valuable function of this device would be to accurately determine the optimum shift points. There is a natural tendency to hang onto a lower gear long past the point where acceleration drops off to a lower value than it would be in the next higher gear.

(Continued on page 4)

FVI NINTH ANNUAL BALLOT FOR RULES FROM 1973 to 1983

(Please vote "Yes" for only one item in each section, "No" only if you absolutely will not accept an item in a final draft.)

MINIMUM WEIGHT should be:

1. 1000 lbs. with driver, 800 lbs. empty. (VeeLine proposal)
2. 1000 lbs. with driver, 825 lbs. empty.
3. 825 lbs. empty. (Present GCR)

REAR SUSPENSION should be:

4. "Conventional". (VL)
5. Any suspension using coil springs surrounding shocks. (GCR)
6. Free.

FRONT CASTER should be:

7. Free. (VL)
8. "VW configuration". (GCR)

FRONT CAMBER should be:

9. Free. (VL)
10. "VW configuration". (GCR)

REAR CAMBER should be:

11. Free. (VL)
12. "VW configuration". (GCR)

STEERING should be:

13. "Conventional" (prohibit bell cranks, extra tie-rods, etc.). (VL)
14. Free, within limits of GCR.

FIREWALL WIDTH should be:

15. Not less than width of engine. (VL)
16. 34", as *implied* in GCR ("Width of body *at* firewall, 34 in.").
17. Equal to body width *ahead* of firewall (present practice).

BODY WIDTH should be:

18. No specified minimum (except firewall width), maximum 42" behind front axle, 31" ahead of front axle. (VL)
19. 34 inches "at" firewall, minimum, to centerline of tires, maximum. (GCR)
20. Free.

AIR PASSAGES THROUGH FIREWALL should be:

21. Permitted to carburetor only.
22. Permitted to carburetor and cooling system.
23. Forbidden. (VL and GCR)

DUCTING (COOLING) should be:

24. Permitted to fan intake only. (VL)
25. Permitted directly to cylinders and heads.
26. Unspecified, except attachment directly to engine is forbidden. (GCR)

FAN BELT should be:

27. Capable of rotating engine when generator pulley is turned. (VL)
28. Unspecified. (GCR)
29. Free.

FUEL TANKS should be:

30. Inside frame. (VL)
31. Unspecified. (GCR)

A CLAIMING PRICE for a complete engine and exhaust system should be:

32. \$950
33. \$750
34. Omitted from the rules.

(Please vote "Yes" or "No" on *each* of the following:

35. A red tail light should be required under low-visibility conditions.

WOULD YOU vote for the VeeLine proposals

36. As they have been presented?
37. If the GCR suspension rule is left unchanged?
38. If the GCR firewall rule is left unchanged?
39. If the GCR body rule is left unchanged?
40. If 39, 40, and 41 are left unchanged?

ASPHALT DYNO

(Continued from page 2)

This is a kit-type device which you assemble yourself if you are that kind of a nut. However, if an electronic wiring diagram means about as much to you as one of your wife's dress patterns, you'll probably skip it, and just wish you had one. In that case, perhaps you'd be interested in a more simple device which will do the same thing.

We built two such instruments several years ago. The first one was based on an old clock, using a couple of the gears to magnify the swing of a pendulum, so as to make the movement on the scale large enough for accurate reading. It didn't work too well—too much friction. The second one was quite successful, having no friction at all, and a very readable scale. We didn't get much use out of it, though—we were kicked off the airport runway we were using for a laboratory before we were able to complete even our first testing session.

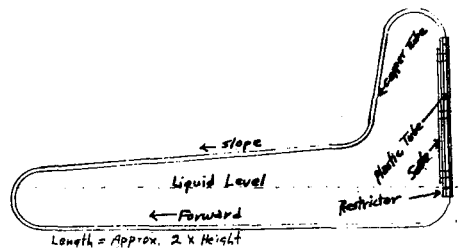
All there is to it is a loop of copper and plastic tubing, partially filled with colored water, with a scale behind the transparent plastic section. The copper was 3/8" O.D., and it was found necessary to install a restrictor — a plug of solder with a 1/16" hole drilled through it — at the point where the lower end of the plastic attaches, in order to prevent surge. Without it the liquid tends to overshoot at first, then fall back, and repeat a couple of times before a definite reading can be taken, at which time the peak is past.

The larger the device is made, the more accurately it can be read. Ours was about 4 ft. long and 2 ft. high. The scale was just a section of a yardstick taped to the tubing with transparent plastic tape. It reads only in inches, which has no relationship with "G" forces, so the results can't be considered scientific, but all we were interested in was the comparison between the different gears, affect of jet changes and timing settings, etc., which plot on a graph

just as well from this scale as from a "G" scale. It doesn't even have to be "zeroed" when it is installed, though the horizontal leg should be fairly horizontal. After all, it's the effect of the liquid being "pushed" to the rear of the horizontal section under acceleration, causing it to rise in the vertical section, which makes it work. Use only enough liquid to fill the horizontal leg and an inch or so of the vertical one.

Probably the best location would be with the horizontal leg on the floor between your legs and the vertical scale just in front of the steering wheel. It could also be mounted on the nose, although at high readings (like in first or second gear) the top of the liquid would be quite a bit above your normal eye level.

It's a bit tricky to use, at best, since you have to read both the tach and the vertical scale at the same time (while keeping the car pointed straight ahead) and either remember several combinations of readings or stop and write them down after each check.



LYNX REPLIES

Fleet Underwood, who bought Bob Riley's controlling interest in Lynx cars not long ago, called the other day to say that Lynx is one builder which does try to answer all correspondence immediately. If they receive it, that is. There is some difficulty in getting mail forwarded from the original address.

The new address is: Lynx Cars, 6455 Le Grand, Detroit, Mich. 48211.

ASSISTANCE PROGRAM

Autodynamics, Inc., has announced that if you have a D-13, and can win the ARRC with it this Fall, you'll get \$1000 in addition to all the other fringe benefits. If you get second place, it's worth \$500; \$250 for third spot.

Not only that, they'll give you free technical assistance in order to get you there. Just get in touch with Bob Fletcher and tell him your problem.

UNCLASSIFIED ADS

FOR SALE: King Vee, good condition, never bent. Hydraulic clutch, adjustable Z-bar, Konis, Smith's instruments, Goodyears. All new wheel bearings and brake and front suspension parts. Lowered front end. Without engine, \$1050, with stock engine, \$1200. Tony Spiridigliozzi, 138 Primrose Ave., Mt. Vernon, N.Y. (914) 664-1152.

FOR SALE: Legal Vee engine, just rebuilt. Balanced, ported and cc'd. Windage tray and sump extension. Also four 6.25x15 Continental Vee tires on new wheels, balanced. Best offer. Bill Deras, 300 Lakeside Dr., Oakland, Cal. 94604 (415) 271-2635 days, 534-4538 eves.

FOR SALE: 2-car Vee stable: (1) '72 Lynx, 7 races, only 2 on 50-plus h.p. engine. 6 Goodyears (2 slicks) mounted. Fuel cell. With drop-axle formula car trailer, \$2200. (2) MK2 Autodynamics. Fresh strong engine, 4 Konis, new springs, new Z-bar. 70% Goodyear gumballs. With sprung trailer, \$1200. Hate to part them—both cars and trailers, \$3150. Bob Dunsmore, 12131 N.E. San Rafael, Portland, Ore. (503) 253-1649.

FOR SALE: Invader Vee, race ready with professionally prepared engine, many spares, good trailer. \$1100 or best offer. George Bell, 2466 24th Ave. E., Seattle, Wa. 98102 (206) EA5-2952.



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