VEE LINE

NUMBER 87 DECEMBER 1971

DIRECTOR'S CORNER

Last Fall, before the various meetings on rules, Frank Schultheis and I spent days on an almost complete revision of the Formula Vee rules. We shuffled them around so that all the "brake" items were in one section, all the "suspension" in another, etc. We tried them out on each other from a cheater's standpoint and revised them, and revised them again, in order to eliminate all the loopholes we could find. We spelled out in detail those items which needed more clarification and included "specific authorization" for the many illegal practices which we have been taking for granted. Not bragging, but merely stating fact — we had a darned near perfect set of rules, practically every item of which has been either accepted without question throughout past years, or approved by at least a two-thirds majority of you people on past ballots.

I guess you know what happened. The main point, "standard VW configuration" was adopted by SCCA, but the accompanying "specifically authorized" deviations were *not,* for one glaring example.

I said our final version was "darned-near" perfect. I'm sure that there still must be room for *some* improvement, however, so starting next month we'll present a section or two in each issue for your comments, and next Fall, whether the rules are to be decided by the Car Classification Committee, as usual, or by a special Subcommittee, we'll have, instead of our usual ballot, simply a "Yes" or "No" vote on the whole schmear. With only a choice between what we come up with in the meantime, and a continuation of the mess we have now, perhaps we can put up a more united front than is generally indicated on our ballots.

VW PRIZE FUND DISTRIBUTED

A news release from VWoA confirms earlier speculation that their $10,000 prize funds for Formula Vee and Super Vee would be distributed on the basis of National points earned this year, rather than on the first ten places in each event, as in the past. Dividing the overal total of points earned into $10,000 for Formula Vee resulted in $9.00 for each point.

A complete list is not available, but the top winners, by Division, were:

Northeast—Peter Pires $405
Southeast—Bill Greer $342
Central—David Weitzenhof $472.50
Midwest—Robert Lazier $378
Southwest—Rick Houston $396
North Pac.—Don Pepperdene $369
South Pac.—Dick Replogle $288

There were 72 other drivers who received smaller amounts.

Because there were only 36 Super Vee drivers who earned National points, each point in that class was worth $18. (Only 13 of them appeared at the ARRC—11 started.)

At a time when most of the major companies are backing off from any involvement in racing, the foreign car importers would seem to be doing at least their share toward supporting racing in this country. Nearly all of them have some kind of racing support program.

Volkswagen of America, with their support of Super Vee (8-race "professional series", over $100,000; 3 cars and teams to Europe for the "international championship"; $10,000 SCCA fund) Porsche-Audi (undisclosed) and Formula Vee ($10,000 SCCA fund) would have to be among the top contributors for 1971.

There has not yet been any announcement of their plans for 1972.

MEMBERS' SOAPBOX

"Dear Don—. . . Goodyear, as you probably now know, is offering a slick tread pattern that seems to work real well in the dry, and should offer less aerodynamic drag. (If it rains, the guy with a tire groover could probably do a good business.)

. . . Continental is making 3 sizes of Vee tires, but the largest is too heavy to be competitive with Goodyear in the dry. In the wet, Contis are fantastic, but the 6.25-15 rear tire is a little heavier than the Goodyear so you lose a little in the dry.

"The 5.25-15 front is right there! These sizes are for the standard sedan ring and pinion setup.

"We are told that if the ambient air temperature gets to 90 degrees, these tires will wear fairly fast, but we haven't seen this yet. At the lower temperatures the tire does wear extremely well . . .

Eric Anderson, Genesco, N.Y."

The VEE LINE of FORMULA VEE INTERNATIONAL
DON CHEESMAN, Director
1347 Fairmont Ave.
East Wenatchee, Wash. 98801

OPEN LETTER

Mr. Bob Sharp, Chairman,
Car Classification Committee

Dear Bob:

You have mentioned a couple of times the "possibility of establishing a special Formula Vee Subcommittee" to consider Vee rules for 1973. I'm sure that every Vee owner in the country would applaud such a move!

You also mentioned your feeling (which is obviously shared by others in the SCCA hierarchy) that the "ARRC Drivers" would somehow be better qualified than would the FVI membership as a whole to make such recommendations. While I can't accept the implication that FVI members are somehow incompetent to pass judgement on such matters, nevertheless I'd certainly encourage the formation of such a subcommittee, even if it were restricted to those individuals. I'm sure that their opinions, as a group, won't be all that different from those of Vee owners in general.

You didn't mention the size of the committee you had in mind, but I would hope that if the entire field of 21 ARRC drivers is considered too large, a handpicked committee from that group would include a representative number of the FVI members (ten of the twenty-one) shown below.

In addition to being obviously qualified by participation at the ARRC (four of them for the second time) and by their professional training and experience, the fact that they *are* members of FVI should indicate their familiarity with the rule situation, and their interest in it. Further, none of them, to my knowledge, has any personal financial interest in Formula Vee which might bias his judgment.

May I urge you, then, to proceed with the formation of this committee as soon as possible, so as to allow them the maximum time available between now and your Fall meeting for their deliberations?

Sincerely,
Don Cheesman

FVI-ARRC DRIVERS

Garrett Van Camp (2) Development Eng.
Jim Lewis ..... Aerospace Eng.
David Weitzenhof ..... Research Scientist
Bill Hoyer ..... Civil Eng.
Stuart Fisher
George Eickhoff (2) ..... Teacher
Bill Bailes ..... Instructor
Burt Richmond ..... Architect
Dick Replogle (2) ..... Sales Eng.
Rick Houston (2) ..... Advertising

HEAD ACHES

There have been a number of questions as to the effect the new rules will have on head preparation. At this writing (Jan. 8) I have been unable to get an official version of the '72 rules from SCCA, but they're going to leave a lot of unanswered questions when they are published.

Flycutting, to attain 43cc minimum combustion chamber volume, *will* be legal. Porting (to the specified diameters) will be legal, with (presumably) some dimensions and specs for the gray areas inside the intake port where it branches. The intake seat, itself, can be enlarged to 29mm, but since all the heads from the "C" version on have this diameter already, this is no big deal.

As was mentioned in the October issue, there is still no legal way to compensate for the metal removed during the flycutting process. This moves the heads—and rocker arms, of course—closer to the camshaft, requiring some kind of compensation in that area, too. Neal Williams was disqualified for using washers under the rocker arm shaft (which started all this hassle) so that's out, evidently. If you can find pre-'63 pushrods, and you're using late model heads, that will do the trick. If you can't find any, you'll have to cheat and make your own, from later and longer ones. (You can't buy them at your VW dealer's parts counter.)

Valve grinding may be an item of controversy, in view of that additional clause in the rules to the effect that parts must be assembled "in stock VW configuration" unless otherwise specifically authorized.

Regardless of the source, most VW handbooks on the market are composed, at least in part, of reproductions of original Volkswagen shop manuals. If yours has a cut of valve seats taken from one of those manuals, it shows the seat with a tapered inner bore, extending almost to the bottom of the seat, plus three "seat angles" which are to be ground each time a valve job is done. If nothing else, this cut can be used to thoroughly confuse tech inspectors, should there ever be any question as to your valve grind.

The seat pictured is very close to the ideal conformation for a racing engine, although it doesn't conform to the seats actually used on the later heads, which have an almost straight bore. The taper shown in the cuts is actually at 75 degrees (specified also in the accompanying directions) while the angle *shown* as the "75 deg. angle" is actually at 65 degrees. The remaining two angles are at 45 and 15 degrees, respectively, and are so narrow that measurement of the precise width and angle would be impossible to determine accurately. Eliminating the *pictured* 75 deg. cut, and taking advantage of the actual one (the long taper extending nearly to the bottom of the seat) making the 45 deg. seat as large in diameter and as narrow as is legally possible, and keeping any error in the 15 degree angle toward 20 degrees, rather than the 10 degree side, will result in a pretty fair configuration from the standpoint of air flow.

"Sinking" the valves deeper in the seats than is normal practice is said to promote an improvement in air flow, but bear in mind that the "Volkswagen configuration" requires that the seat can only be ground until that 15 degree face reaches the outer edge of the seat. When you start grinding into the surrounding metal, that's no longer "standard configuration" . . You might want to mention that, in case you're getting your heads done by some professional.

ELECTION OF OFFICERS

Well, the appeal for candidates for officers didn't result in really enthusiastic response, as usual. We have one volunteer for Vice President, and one nomination. With the Vice President and Secretary moving up a notch, that gives us two candidates for each of the first two offices, and I'm going to "volunteer" one for Secretary, to round out the slate. We have, then: For President: Richard Bell, Minneapolis, Minn; Burt Richmond, Chicago, Ill.

For Vice President: Jerome Thorpe, Tacoma, Wash.; Tom Tomlinson, Erlinger, Ky.

For Secretary: Bob Boyd, Canby, Ore.; John Heine, Cambridge, Mass.

Nothing much in the way of campaign literature from any of them, but Burt Richmond was nicely nominated and endorsed by Glenn Jenkins and wrote the letter about the ARRC which was published last month. Richard Bell is our present Vice President. Jerome Thorpe is new to Formula Vee, but volunteered his services, and being a teacher would certainly be able, as well as willing. Tom Tomlinson, our present Secretary, is in "industrial sales" and has been with Formula Vee for four years. Bob Boyd has been dicing with John and Petunia for seven years. He has a VW shop, where he spends a good deal of time preparing Vee engines. John Heine has had three years in Formula Vee. Last Fall he organized quite a meeting of Vee owners in the NE, at which a number of rules proposals were agreed upon and were presented to SCCA —all of them in general accord with our ballot decisions, incidentally.

Again, election of officers in this organization isn't just an idle exercise. *Some* day they're going to have to assume the responsibility for continuing its existence. Less than a month ago I was that close to accepting a promotion which would have taken me out of racing entirely. (Probably that was one subconscious reason for turning it down.) So let's be taking this thing seriously!

WHICH TIRES FOR '72?

"Dear Mr. Cheesman:

"This is in answer to your note to Dick Ralstin concerning the difficulty in obtaining Vee tires and their excessive wear.

"In our effort to improve the tire last Spring, we changed the compound. Without delving into our internal problems, the control of compound mixing within the factory slipped when we built the first large batch of new compound tires. We soon became aware of our problem and halted further construction until several other compounds were built and tested.

"I know how important Vee tires are to Vee drivers, but in our overall picture of professional racing, Vee tires are not on the top of the list. In other words, it took us much too long during the height of the racing season to recover.

"The tire, we think, is good now and hopefully we'll have further news in the Vee Line in the near future.

(*and from a following letter*):

". . . For the 1972 line, we will introduce a new "low" front tire at this year's ARRC. These and our regular line should be readily available to everyone next year.

"Your request for information on our tire marking system would be almost impossible to explain and keep track of. The coded numbering system permits us to trace tires to a certain production period. However, it is impossible to keep track of this without going into the factory to find out.

Lee Gaug, Field Manager,
Racing Tire Div.
Goodyear Tire & Rubber Co."

(*These are the "slicks" which made news at the ARRC, of course. Your local Goodyear dealer probably doesn't handle them, but should be able to tell you who does.*)

"Dear Mr. Cheesman:

". . . We at present plan to bring in new molds to make a new Formula Vee tire, and we are anticipating a very successful one at the time that we complete our development. We have discontinued the production of the Vee tire in the R135 design until such time as we bring in the new one, and would expect that to be available in the Spring. At that time we will make a proper announcement so that you will be fairly aware and familiar with the new tires we bring out. We certainly appreciate your interest in Firestone, and we will keep you advised.

W. R. McCrary, Director of Racing
Firestone Tire & Rubber Co."

(*No further details yet. Again, check with your local dealer if you don't know where to get them.*)

"Dear Mr. Cheesman:

Thank you for your letter of Oct. 18 inquiring about our Continental Formula Vee tires. At the present time our stock is completely exhausted. We do expect a sufficient quantity as soon as the dock strike on the East Coast is settled.

"I am enclosing our price sheet. Most drivers on the East Coast are using size 5.25-15 on the front and 6.25-15 on the rear.

"The Continental Vee tire is getting extremely popular here in the East... Continentals were on the winning car last February at Daytona Beach...

SIZE	LIST PRICE	FET	WEIGHT
5.25x15	$42.50	.80	10.79 lb.
6.25x15	44.50	.83	12.18 lb.
6.75x15	46.50	.85	14.83 lb.

"... In answer to your letter of Nov. 3, all Formula Vee tires should be orderd directly from our Carteret office, and will be shipped from here.

"Conti Rubber Products will assume all freight charges, provided tires are paid for in advance ...

Mel Robetz, Vice President, Sales
Conti Rubber Products, Inc.
Careteret, N.J. 07008 (201) 969-2200"

(In view of the surcharge on foreign imports, change in excise taxes, dock strike, etc., it might be a good idea to confirm price and availability before you order. If you haven't yet decided on which brand, perhaps this next item will help.)

"... We had our ballot for changes to the Formula, and although there was a strong vote for things like twin carbies, etc., the rules will be much the same as before. The major changes are that all competitors must belong to a Formula Vee Association and abide by its rules... and that we will have the power to limit the type of tyre to one type. It has been decided to use the new Dunlop, which costs about 40% of the price of the Firestone or Goodyear, has at least equal performance, even in the wet, and wears out at about half the rate ...

John Moxon, Dundas, Australia"

(John was a top Vee driver in Australia before an accident at Oran Park a year or so ago put him permanently into a wheelchair. He is now running an insurance business, and is President of the Formula Vee Assn. of New South Wales.)

WARNING!

"There was a recent Court of Appeals which ruled against the use of STP gas treatment in SCCA competition. One reading of the label will lead one to believe that some power increase is likely. Wyn's "Spitfire" will increase octane ratings, and "Sta-Power" also falls into this category of non-usable additives. You are advised not to use *any* gas treatment during SCCA competition."

(From Frank Schulthies' column, "Tech Notes", in the San Francisco Region's "Wheel".

Don't hold your breath until you read about this ruling in "Sports Car"! Court of Appeals rulings are considered "Top Secret", apparently.)

A BIT ABOUT VALVES

You do replace your exhaust valves fairly frequently, don't you — like perhaps once a season? There's no definite life expectancy for them, of course, but even in normal use in the Beetle they have a tendency to separate just below the head after 30,000 to 50,000 miles. No, of course your Vee hasn't gone that far! But Beetles don't get wrapped up to over 5000 rpm, and run at Vee temperatures, either!

You may have noticed in your VW manual that the valve keepers should be loose on the valve stem—even when wedged into the valve spring seat—so that the valve will rotate, due to the offset of the rocker arm screw. You know that really works? I've always been a bit skeptical about that—with the tension of the valve spring exerting so much friction on it, how could that slight offset have any effect? However, on the '65 heads that I traded the kid across the street out of, there's a definite groove around the top of the valve stems where those adjusting screws have been pushing them around and around. And I always thought valve rotators were complicated!

TO GEN, OR NOT TO GEN

I've been asked twice in the past week, "What have you done with Petunia's generator?"

Well, we're shy, cautious types who hate to make a spectacle of ourselves by being last to get off the line, due to having to be pushed, so Petunia's generator still gens. However, we do try to take advantage of our opportunities, too, so it doesn't gen *all* the time. We use a Honda motorcycle battery (for a C-90, I believe) which will *usually* start the engine, even on a cold morning, or after a layoff which leaves the carburetor bowl empty, but we wouldn't want to rely on it for an entire weekend without recharging, even using push starts whenever possible.

A couple of our competitors have little portable generators for frequent recharges, and some carry spare batteries, but we're pretty happy with our system. It's simple, really—just a Chevrolet stop-light switch (mechanical type) wired into the line between the generator and the rest of the wiring system, and operated by the throttle, so that at full throttle the switch is "off", but is "on" at all other times. True, during a race, or practice, the throttle is wide open probably 95% of the time, but that other 5%, plus driving time to the gas pump, and to and from the pits, is usually enough to keep the battery charged. If it still shows signs of weakness, a few minutes at fast idle will also do the job.

The Chevrolet switch has a lever about 3" long which does the activating. (There are two models, with levers on opposite sides.) It has a two-hole mounting bracket, just right for mounting on the fire-wall. We happen to have throttle linkage (rods with aircraft rod-ends, and a bell-crank) rather than cable, which made the installation very simple, but it could no doubt be adapted to other systems, perhaps by mounting it at the throttle pedal.

Actually, it apparently does not entirely put the generator out of operation. At least, the red light doesn't come on with the switch open. However, under those circumstances any power generated has to be absorbed within the generator itself, and with no place to go it would result only in heating the generator windings. Since there is no sign of heating, we can only conclude that the power absorbed by the generator has to be so slight as to be of no consequence. There would be, of course, some additional power loss due to friction of the brushes on the commutator, and to air drag between the armature and the field coils, but until we get to the point where we figure that another thousandth of a horsepower is all that stands between Petunia and the ARRC, we won't worry about that.

Another possibility would be use of a mercury switch. Before this sort of thing was legal, one trick was to mount one on a frame member (out of sight, of course), where it would be "open" during acceleration, but "closed" during the rest of the time. A better method would be to mount it on the throttle shaft at the carburetor, so that it would be tilted by the rotation of the shaft. One thing to bear in mind in any installation is that the generator may put out as much as 30 amps with a dead battery, so the swich, and its leads, should be able to take that much load.

Actually, this may be one of the least important things you can do. I'd appreciate any real factual dope from someone who has tried it out on a dyno, but we've been unable to detect any difference in rpms in the shop with the switch operated manually. Either this method *doesn't* unload the generator, or the amount of power consumed is so small that it doesn't show.

BLOWBY PROBLEMS?

This may have been mentioned before, but I'm not sure, and I'm not going through all the back issues to find out. If you've read it before, just go on to something else.

For a couple of years, Petunia had a nasty habit of spewing oil out the breather when she was revved up to around 4800 rpm. Competitors complained about the oil on their cars and goggles, and it occurred once on a chassis dyno, so we knew it was happening, but we couldn't figure out the reason. We changed rings several times, honed the cylinders, and did all the right things when we rebuilt the engine, but it still happened frequently. The cylinders miked between .002" and .003" oversize, which was perfectly OK, and they had no perceptible taper, due partly to honing heavier at the bottom than at the top when re-ringing, so there appeared to be no reason for ring-flutter. However, by accident, during the miking of one cylinder, I found that the top half-inch was belled out like a velocity stack! Well, not quite that much, but almost—like to .008". Enough, evidently, so that at high speed the rings failed to follow the contour of the cylinder wall at the very top of the stroke, allowing gasses to pass *outside* the rings (compressing them into their grooves) rather than behind them, which normally *increases* the pressure against the cylinder walls.

STOLEN

(From the Formula Vee Assn. New Zealand's "Vee Speak")

"Slipstreaming is an art, and essential for Formula Vee drivers. Our underpowered cars can be made to go much faster in a race by the wise use of slipstreaming. But a note of warning—if used and executed incorrectly it can be highly dangerous, as well that it will give you no advantage at all.

"A car going along at speed creates a sort of still air area directly behind it, a vacuum if you like. The air outside this area tends to rush back into this vacuum, and it is in this inrushing stream of air that you must place your car to take advantage of it. This stream of air is most noticeable some five car lengths back behind the leading vehicle. So contrary to what some drivers think, to get the greatest benefit from a tow for the purpose of passing a vehicle faster, or with a similar speed potential as yours, is not to get right up his tail, but to tuck in some five car lengths back (this depends a great deal on how fast the car is travelling). You then find your vehicle being towed along in the leader's slipstream, which really is a misnomer, as the fact is that you are getting drawn into the vacuum created and at the same time pushed by the inrushing air, the combined effect being a greatly increased speed.

"A contributing factor is the fact that your frontal area is now reduced for all intents and purposes, because no air is in front of your car and you are driving into a vacuum. From here on you have to judge very finely when to pull out of the slipstream and make your passing move. If you pull out too early your car will only be capable of getting alongside the leader; if you don't want to pass but just get a tow, then you drive right up behind the leader and stay there. CAUTION: Your concentration must now be at its maximum. Your old braking points will now have changed and harder braking will be essential, so watch it.

"To summarize: the moment another car passes you, if the difference in speed is not too great try and tuck in behind it, and get the benefit of a tow. If you wish to pass the tow car drive up to it, and pull out when you consider that you have sufficient speed to execute the movement. Otherwise, the closer you can get to the car in front, the greater the adavntage you get. CAUTION: This needs a certain amount of experience.

"The advantage of slipstreaming is greatest at high speeds, and it varies as the square of the speed. Below 60 mph the saving is negligible. Take special care, though, when slowing down. The distance between cars in a race is measured not in yards, but in seconds. This means that if two cars are lapping at the same average speed the TIME interval between them remains constant. On the straight a speed of 110 miles an hour means 160 feet per second, and 32 feet covered represents one-fifth of a second. If the time interval remains unchanged while the cars go into a hairpin bend which can be taken at 25 mph (i.e. 37 feet per second) the 32 feet shrinks to 7.5, and the man behind, for all that he has gained nothing in the way of time, may ram the leading car in the tail. The 32 foot interval will re-establish itself on the next straight when the cars get back to their 110 mph. Through this difference, which is apparent rather than real, drivers often wrongly conclude that the leading car is holding him up, or going too slow in the corner. Simply by reason of the way this distance varies, cars often shunt one another from behind. This happens most frequently in slow corners. Read this carefully and think about it. Don't go mad the next time you are on the track, but if possible, try this during a private practice with another car. If you cannot do this, have a pow-wow with a driver having the same speed potential, before an official practice on race day, and try it out."

UNCLASSYFIED ADS

FOR SALE: Zink, with strong engine, '71 suspension, adjustable Heim-jointed Armstrongs, some spares. Includes log with suspension settings, dyno curves, air density graph, gearing and tire sizes for all NE tracks. Also have a Caldwell D-13 kit. Tony Scotti, 14 Ashland St., Somerville, Mass. 02144 (617) 776-8590.

FOR SALE: Zink, with latest suspension and air intake modifications, chrome everything, 4 sets tires, fresh McGee engine, some spares. 3rd CenDiv. $3700. Also 3 other Zinks from $2200 (1 new, never used.) Burt Richmond, 111 E. Wacker Drive, Chicago, Ill. 60601 (312) 644-5080, office; 549-5675, home.

FOR SALE: '63 Formcar with balanced engine, cam-bearing case, baffles, sump extension. '65 transaxle and front suspension. R-5 Goodyears. Excellent condition. Will sell with or without engine. Robert Butte, 710 Lakeview Drive, Independence, Ky. 41051 (606) 356-5377.

FOR SALE: Formcar, modified, meets '71 specs, with 2 engines and many spares, $1200. Dale Sawyer, 422 E. Main St., Auburn, Wash. (206) UL4-5920 days, 939-3856 eves.

WANTED: Congenial tenant for third stall in our air conditioned shop (2 Vees, already). $40 month includes heat, light, use of power tools, access to spares, help and advice. Only serious racer (veteran or novice) wanted. Mickey Mouse Racing Enterprises, 3754 Maple Ave., Northbrook, Ill. (312) 272-6799.

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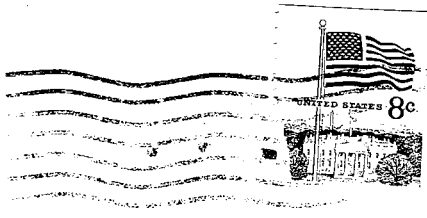

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