



# VEE LINE

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## DIRECTOR'S CORNER

Had a couple of encouraging rumors to the effect that the Board of Governors would (or did) rectify some of the more obvious omissions in the '72 rules, but Ron Zimmerman says, "No changes". They merely rubber stamped the rubber stamped version of the Car Classification Committee, handed to them by the Competition Board. The official wording won't be available for another week or so. (More on this later!)

There's one bright spot (OK, maybe it's just a bit of a glow) in all this. One official, at least, has mentioned to me (and to Frank S. at Atlanta, too) the "possibility" of establishing a "Formula Vee subcommittee" for establishing rules for 1973. That's not much to go on, but it certainly is the brightest suggestion made in regard to Formula Vee in a long time! I suggested that FVI, as a whole, should be considered such a subcommittee, and that our recommendations should be adopted without question, since we're the people who have to live with the rules, and are certainly the people most familiar with Formula Vee. That didn't get a big enthusiastic reception—seems that FVI members, *as a group*, are considered by SCCA officials to be somewhat less than mentally competent to determine their own destiny. However, "if the ARRC drivers approved . . .", that would carry some weight.

OK, so let's have a subcommittee of the ARRC drivers—eliminating, however, those who buy their engines and hire their maintenance work done, and who don't know even what kind of sparkplugs they are using. And let's do it NOW! Not next September, figuring on that committee coming up with all the answers in a single overnight session, but NOW, so that they can be corresponding and arguing and considering, and coming to some unanimous conclusions without the pressure of time!

## VAN CAMP VEE CHAMP AT ARRC

It took a week to round this up—a letter from Burt Richmond, a phone call to SCCA Denver, (they still didn't have a copy of the Vee results a week later!) and one to Frank Schultheis, plus the story in Autoweek, and probably you've got it all, already, but I'm not going to let it go to waste now:

Garrett Van Camp, a development engineer for the Ford Motor Co., broke a five-year winning streak for Zink cars, bringing his Lynx in several seconds ahead of Rollin Butler's Zink, which was several seconds ahead of the three contenders for third place, Bill Greer (Zink), Peter Pires (Zeitler) and Robert Lazier (Zink).

A few of the highlights, from Burt Richmond: "Even though practice didn't start until Tuesday, Monday was a flurry of activity, including registration and tech, with tech lines being as long as 3 hours. Tuesday's weather (low 40's) put a damper on enthusiasm. Wednesday, with the pits cold, wet, and muddy, only 7 cars went out to practice, on the ice. That red Georgia clay stayed muddy right up until Sunday. Who says racing isn't fun?!"

(The paved pits are ample for a Trans Am or Continental, but they didn't count on the ARRC. With over 400 cars, a "pit" was where you could find room. The track furnished 6 tractors for snaking cars out of the mud in the remote corners. Don).

"Thursday's qualifying caused a great

*deal of activity around the Goodyear tent, with a third of the competitors experimenting with Goodyear's new low-profile no-tread front tire which is more than an inch smaller in diameter than the conventional fronts. These fronts, with the low profile rears, now approximate the size of the Continentals that some of us have been running since their introduction last February at the Daytona Brundage Trophy Race. Several drivers came in for tire changes, to see what the differential would be with conventional Goodyear fronts (they seem to give a half-second advantage). The new slicks really stick, creating a neutral steering for the Lynx I was driving. John McCollister tried the slicks all around, but put on the low profile rears for the race.*

*"After qualifying, all Vees stopped in the pit lane so the engines could be sealed for the race. This included a strip of material across the intake manifolds, where they join the heads, and at the rear of the crankcase, so it couldn't be split. (A couple of years ago there were charges that some cars were being qualified with illegal engines, which were then swapped for legal ones after a good grid position had been assured. Don).*

*"Friday was for working and spectating, as there was no track time scheduled for Vees.*

*"There was a 15 minute warm-up peri-*

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## CAMS, SOME MORE

It was mentioned last month that the Car Classification Committee had some rather unrealistic views on adopting a dial-indicator-and-degree-wheel procedure for checking cams and valve trains, the consensus being that if the specs were tight enough to be effective they would rule out some of the more unusual combinations of parts, and that if they were loose enough to include those combinations they would be too loose to be "effective" (!). There was also another fear in the hearts of those making the decision—that if the specs were very wide, they would encourage some of the Vee owners to get cheater cams ground which would, within those limits, include the most favorable tolerances at each point on the cam slope.

This might be a factor if the tolerances were really great, but even between the "B" and "C" cams, the only appreciable difference is in the lift—the "B" cam comes to more of a point, while the "C" has the point rounded off somewhat, giving about .020" less lift at the peak. Nevertheless, the myth persists that there are some great variations in stock cams.

Regardless of what is considered "great", if it's enough that our "experts" can't bring themselves to set a standard for them, it's too much. Bob Sharp, Chairman of the Committee, suggested a possible solution, which would permit him, at least, and perhaps the other members of the committee too, to accept a standard checking procedure. His idea is for SCCA to arrange with some professional cam grinder to furnish a "standard SCCA Formula Vee cam", to be sold to all Vee owners. It would be the only acceptable cam for Formula Vee. It would be sold by SCCA, at a cost only great enough to defray expenses—probably twice the cost of a stock cam, but less than the cost of a "cheater".

I don't think this is necessary—I believe that we can accept the tolerances of the stock cams, myself, but if this is what it will take to get a standard checking procedure adopted, I'm for it! What do you think?

## The VEE LINE of FORMULA VEE INTERNATIONAL

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## VAN CAMP VEE CHAMP AT ARRC

(Continued from page 1)

od Saturday morning, with many last-minute changes to rain tires. The weather was so unpredictable that several drivers didn't change, but took their rain tires to the false grid, too.

"The race turned out to be a runaway for Garrett Van Camp. He qualified second to Jim Lewis (Zink), but took the lead at turn 1, and held it for the entire race. There was no contention for second place (Rollin Butler) or for third, until John Magee (Caldwell D-13) dropped out due to lack of oil pressure.

Greer, Pires, and Lazier put on a typical Vee race for that spot, finishing in that order.\*

"Lap times were down considerably from last year's, due to the non-cc'd heads. (Can't find the race record, but Harry Ingle, last year, qualified at 86.92 mph. Van Camp's AVERAGE speed was 83.10. Don). Garrett's times were within .2 seconds per lap, which I call consistent driving!

"There was much evidence of experimentation with forced-air cooling via shrouds, scoops, and ducting forcing air into the fan housing. It certainly worked well for Van Camp, who placed his ducting along the sides of his car. Bill Greer was plagued with the unique problem of not having high enough temperature to keep his engine running properly. In an attempt to baffle the air intake, he ran much too hot during the race and was therefore down on power, fighting to come in 3rd."

Contrary to the report published here last month, the special letter of Oct. 26 to the ARRC competitors did not make a special dispensation for the cc'd heads. They had to prepare new ones. They were allowed to use the "illegal" spacers on the front torsion arms, however, Nearly 20 controversial items were spelled out, so that everyone knew in advance, just what would be required.

(Do you suppose they will put out a newsletter spelling out just what will be required under the '72 rules?)

Frank Schultheis reports that except for a couple of overlength cars, everyone was at least morally legal, right at the start and all the way through. One competitor did have to make arrangements for a new venturi—his had been machined from brass, instead of from the specified "VW venturi". You won't find it in the new rules, but for the ARRC, at least, brass carburetor floats were considered legal.

Frank said the Formula Vee driving was without question the best, and "cleanest" of the entire event, followed by a couple of the smaller sedan classes and Formula Ford. The rest of the races, he said, were strictly from "driver's school", including an unusual number of bashes, off-courses, and protests.

### Results

1. Garrett Van Camp

CEN Lynx

- |                      |                  |
|----------------------|------------------|
| 2. *Rollin Butler    | SE Zink          |
| 3. *Robert Lazier    | MW Zink          |
| 4. *Bill Greer       | SE Zink          |
| 5. *Peter Pires      | NE Zeitler       |
| 6. John McCollister  | SE Lynx          |
| 7. Jim Lewis         | SW Zink          |
| 8. Rick Houston      | SW Zink          |
| 9. Gary Enoch        | SP Fiberkit      |
| 10. Richard Schmer   | MW Zink          |
| 11. Don Pepperdene   | NP Leech         |
| 12. Stuart Fisher    | NP Lynx          |
| 13. David Weitzenhof | CEN Autodynamics |
| 14. Dale Deitrich    | NE Zeitler       |
| 15. Fred Stout       | MW Zink          |
| 16. Bill Hoyer       | NP Lynx          |
| 17. George Eickhoff  | SP Zink          |
| 18. Bill Bailes      | SW Autodynamics  |
| DNF: Burt Richmond   | CEN Lynx         |
| John Magee           | NE Caldwell      |
| Dick Replage         | SP RCA           |

\*Conflicting reports for these positions.

These are probably correct. Another reporter also had Butler in the lead several times during the first seven laps.

### FLASH!

Not officially confirmed, but probably true: Driver's age limit for SCCA is lowered to 18 years for 1972.

### UPDATE FORMULA VEE?

The question of updating Formula Vee, due to the inevitable obsolescence of the 1200 someday, has been a subject for concern ever since the 1300 VW was introduced in the Fall of 1965. There is no doubt a day coming when this possibility will become a reality, but when you get right down to it, the proposals that we should start considering a revision of Formula Vee a couple of years ahead of time in order to lessen the impact, are just not realistic. Consider:

The 1300 VW was sold here for only one year. What if we had, as many urged at that time, adopted that as our basic source of components? It was superseded by the 1500, which was the standard for three years before it was replaced with the 1600. There is already a 1700 VW, and who knows what there will be next year, or the year after that? How could we plan ahead?

Like the other manufacturers, Volkswagen doesn't even tell its top organization members what it's going to do, until it's announced publicly. For instance, in June, 1969, VWoA was going all out to get Formula Vee "updated" to 1500cc components. Before the end of the year they were exerting their influence to get SuperVee adopted, using 1600cc components.

While we're on the subject, consider that word, "updating". When we discuss the obsolescence of the 1200, it's not just the engine we're talking about, but everything else, as well. The swing axle, the front suspension, the steering, the brakes—everything we use now is on the list. It's not just a case of going for a few more cc's in the engine, then, but a complete change of everything, including the frame,

and probably the body, that we'll be faced with when Formula Vee, as we know it, comes to the end of its life. This fact is what saved Formula Vee, and led to the adoption of Super Vee, when it was pointed out to IMSA and SCCA that VWoA's proposed "updating" would actually be the end of Formula Vee, since there would be no possibility of adapting the later components to a chassis designed for the 1200 parts.

What to do? Should we all try to palm our cars off onto unsuspecting beginners while there is yet time? Heck, no! The latest word from the VW parent organization is that parts will continue to be furnished, at least through 1975, and probably longer than that. What other racing class can give you that guarantee? Even Formula Ford has had one engine change in its relatively short life, and so has SuperVee. Formula C? Formula B? Just name any class that you think will outlast Formula Vee!

Overheard in the pits: "My car's going better than I am today!" "I can take that turn flat out—but it takes an awful lot of infield!"

### MEMBERS' SOAPBOX

(Bill Deras, Oakland, Cal., sends a letter addressed to "Dear Don; the FV driver's answer to Dear Abby". Thanks, Bill—I guess).

"Don, What's with question 37? It's a new one on me. How about some elaboration?"

Please spend some space on distributors. (1) How much advance should I be attempting to obtain? (2) Should the advance curve differ between the "B" and "C" cam? (3) Where should full advance be reached? (4) Does "standard" distributor mean the advance curve can't be changed?

Charles Mercalf, Colorado Springs, Colo."

Chuck, you really know how to hurt a guy! You obviously don't read all this tripe! "Updating Formula Vee to more up-to-date VW component" is suggested by two or three people every year for inclusion on the ballot, like in the August issue, for example.

I'm not an authority on distributors, among a lot of other things, but I've read a lot of articles by people who were supposed to be, and to put it in a nutshell, for racing it doesn't seem to matter much what you use for a distributor, as long as it puts out a spark for each cylinder every time it is supposed to. It doesn't seem reasonable or logical, but evidently, regardless of the type of engine or the speed at which it is turning, the optimum spark advance for 2000 to 2500 rpm is also the best for any higher speed. The action of the distributor (the "advance curve") then, at any lower speeds, is of little interest as far as racing is concerned.

If we consider what takes place in the cylinder, this becomes somewhat easier to accept. Spark advance (firing the charge in the cylinder before the piston reaches

the top of its stroke) is required in order to get the fire nicely started before the piston starts back down again. It's common usage to refer to "explosions" in the cylinders, but actually explosions are something we definitely do NOT want! The fuel mixture has to BURN—very rapidly, to be sure, but it should be a regular progression of the "flame front" from the spark plug to the remote corners of the combustion chamber.

An explosion CAN take place, if the fire is started too soon, so that it builds up enough pressure before the piston starts down to ignite the balance of the charge by spontaneous combustion (starting simultaneously throughout all parts of the still unburned portion of the charge). This is somewhat similar to the action of gunpowder, which will burn relatively slowly in the open, but explodes instantly when confined, under pressure. Such an explosion, also called "detonation", is what causes that "ping" if the spark is too far advanced, or the compression is too high, or the octane rating of the gasoline is too low, or there's a spot in the cylinder which can get red hot, like a spark plug insulator or a sharp corner in the combustion chamber, or a heavy coating of carbon.

So how come it doesn't take progressively more spark advance all the way, as the engine speed increases, in order to get the fire going sooner? Well, the scene in the combustion chamber isn't just a stationary mass of fuel mixture, with a nice spherical ball of flame starting at the spark plug and spreading uniformly in all directions. It's more like the center of an egg beater, in a bowl full of eggs.

Most engines (and the VW is an excellent example) are designed so that the piston comes within a few thousandths of some flat area in the cylinder head at the top of the stroke. That area is known by the very untechnical and unmechanical term, "Squish Area", probably because the portion of fuel mixture in that area is rapidly "squished" out into the main combustion chamber as the piston reaches top center. The faster the piston rises, the more rapidly the mixture is squished out, and the more turbulence is created in the combustion chamber. The increasing turbulence, as engine speed increases, speeds up the "propagation of the flame front", so that the burning takes place more rapidly, creating the same result that might be expected from increasing the amount of spark advance. Fortunately, the speed of combustion seems to increase directly with the speed of the engine, so that no change in the timing of the spark is required above the 2000-2500 rpm range.

Actually, the principal function of the distributor is to RETARD the spark from its NORMAL operating point, for ease in starting, and to prevent too rapid a buildup of pressure at slow engine speeds, which would cause detonation. You who are too young to have started an engine with a

hand crank can't fully appreciate what too much spark advance can do, even though you may have heard of an engine "kicking". With the charge fired too soon before the piston comes to the top of the stroke, it doesn't come to the top—it goes back the other way! Rapidly!

At low speeds SOME advance, from that required for starting, is beneficial. At the starting setting the spark occurs so late that the charge isn't fully burned when the exhaust valve opens. On the other hand, full advance would get a good portion of the charge burned before the piston was far enough down the cylinder to provide room for the expanding gases, causing a pressure build-up which would "detonate" the balance of it. Up to the 2000 rpm range, then, a coordinated advance of the spark timing seems to be required.

That's a long way around to get to your questions, but maybe it will help you understand the answers. OK, how much spark advance do you need? If you have access to a dyno, the answer is simple, of course—try it and see. One authority says (and it sounds logical) that the setting at high speed and full throttle should be arrived at only after the engine has run long enough under those conditions to have attained a normal temperature—if the spark is set at the "best" setting after just a few seconds, it may be advanced so much that detonation will occur as soon as the engine is thoroughly heated up. Since you'll only be running your Vee under those conditions on your longest straightaway, it probably would be sufficient to maintain them on the dyno for an equal period. Try the settings for both your maximum and minimum operating speeds, and you'll find that if there's any difference it will be so slight that you wouldn't be able to compensate for it by fooling with the advance curve, even if it were legal, which it's not. (Which takes care of #4.)

If you don't have a dyno handy, use (as Ron Grable puts it) the "asphalt dyno". Start with a bit more than ten degrees (using a timing light with the engine dead) and then experiment on the track with it. Come out on the longest straight at some constant rpm and check your engine speed at some constant point at the end of it. Make just veeeeery small adjustments each time. (Leave the clamp just tight enough so the distributor won't turn by itself, but can be turned easily by hand.)

As for #2 and #3, I think we've pretty well determined that the "curve" isn't important in racing. The advance will be "all in" at around 2000 rpm, and you won't let your engine speed drop below 2000 (3500) so what it does below that point doesn't matter.

"Dear Sirs—As a member of the Formula VW Association of South Africa and an active Formula VW driver, I would like to subscribe to your Journal, "Vee-Line" . . . I would also like to correspond

with other Formula V drivers with a view to exchanging information on Formula V activities. My age is 19½ years, and I have been racing for 1½ seasons.

Jeffrey Wayburne, 118 Odell Road, Sunningdale, Johannesburg, South Africa.

How about that, you recently emancipated teenage Associate Members? You know, of course, that you could race in Canada, too. Did you notice that "Formula VW"? In South Africa the name was changed about a year ago in return for some sponsorship by the Volkswagen organization. "He who pays the piper calls the tune".

" . . . Don, I saw that question about the rules updating for 1974. Will that mean that my preparing a Vee for next year will be a waste of time? Would it be better to wait for new rules, or won't they be so different?

Ben Antanaitis, Kingston, N.Y."

Ben, this question has been on the ballot every year since the 1300 VW was introduced in the Fall of 1965, simply because we make a habit of including ANY proposal we get on the ballot. Just look at the vote on it! Especially since we now have "Super Vee" to take care of those who want to update and go faster, I don't see any possibility of a change in Formula Vee in the next five years, at least.

"Dear Don—After you have given so many good tips and defended our rules in the past, I was very disappointed when I finished reading the last VeeLine. You explained in detail how to make an "Illegal" and in my opinion "Butcher's" modification to change the front wheel camber.

Please read the rules and Shop Manual before printing any serious article such as that one.

Negative camber is not required to win a race!

Juan Perez, Arlington, Va."

"Dear Don . . . I can't find anything on the front camber adjustment in the Aug. VeeLine, but I'm all for it.

"Bob Ostergard, Squamish, British Columbia

OK, I goofed on that date, Bob—had it written for the August issue, but didn't have room for it and didn't notice that it was in the September one, instead. (Bob noted on his renewal application that he was "neither the owner nor a non-owner of a Vee. I am owned by a VEE!")

Juan, you're right, to some extent, and I wondered at the time if it was questionable. It was definitely illegal at that time, because the front torsion arm spacers—of ANY width—are NOT of "VW manufacture" and were not "specifically authorized" modifications, either. It is probably somewhat sneaky to simulate worn bushings with a file, but other than that it appears to me to be as legal as locating the torsion arms at normal spacing. Note that is one of the loopholes left in the 1972

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**MEMBERS' SOAPBOX**

(Continued from page 3)

rules. Parts will have to be assembled in "stock VW configuration" in the future, unless otherwise "specifically authorized", but on the other hand the spacers (which WILL be legal) apparently may be of any thickness. This is another of those items which were brought specifically to the attention of the various Boards, and which were nevertheless deliberately left unresolved. Note that this modification was approved on the ballot by a two-to-one majority, so let your conscience (and tech inspector) be your guide. If this is illegal, so is any caster setting greater—or less—than 2 degrees!

As to its being a "butcher's" modification, the quality of the bearing surfaces certainly is not up to normal automotive standards, but the link pins are still parallel to the axis of the torsion bars so that no misalignment occurs under varying conditions of load. This cannot be said of the current alternate practice of bending the torsion arms to achieve the same result.

As to the necessity of this modification in order to win races, I agree with you—it is NOT required, and may not be even beneficial. However, it is being done, and there have been a number of requests on how to do it, so there it is.

**BACK IN BUSINESS**

Bob Fletcher, Manager for Autodynamics, mentioned in the phone conversation mentioned elsewhere, that Autodynamics has reconsidered its decision to quit business. They don't intend to cover as much territory as before, but will continue to build the D-13 Vee and handle the Lola Super Vee, at least, and "maybe get into USAC racing—as a team, not as a manufacturer".

**ABOUT THE BALLOT**

Hey, you people were really interested in this one! We got the best percentage of returns we ever had! We haven't grown much since last year—a year ago we sent out 503 ballots, and this year it was 522. However, we got back 305 (not quite 61%) a year ago but this time you returned 327, or 63% of them! I'll bet there

**UNCLASSIFIED ADS**

**FOR SALE:** Formcar frame with front suspension and reversed transaxle, \$275. Don Trudeau, 1600 SW 312th, Federal Way, Wash. 98002 — (206) VE 9-4731.

**FOR SALE:** '68 Viper (Looks like Crusader) Good condition. With trailer, \$800. Dan Harman, 13423 3rd Ave. S., Seattle, Wash. 98168 — (206) 248-1842.

**FOR SALE:** Modified Crusader, fresh engine, just balanced and magnafluxed—never raced. With trailer, \$900. Ray Desert, P. O. Box 9007, Brooks, Ore. — (503) 363-8586.

**FOR SALE:** Zink, with two engines (1 Engine Tech, 1 Zink), spare nose, trans set up for long tracks. Immaculate. With trailer, \$2995. Jason Anderson, 3634 Elm St., Pittsburgh, Pa. 15234 — (412) 563-6999.

**FOR SALE:** '71 Calwell D-13 kit, plus '65 engine, trans. and front end. Engine balanced, heads ported and polished but never rebuilt. \$2200 (negotiable). John Killelea, 34 Makamah Beach Road, Northport, N.Y. — (516) 261-6887.

**FOR SALE:** '65 Bobsy Vanguard. New engine, 3 sets Goodyear gumballs, Konis,

isn't another organization in the country which gets that kind of returns from a mail ballot!

Apparently the deadline of the 15th allowed enough time for most of those who really wanted to vote—we had ballots back from Florida and New York on the 7th, and from all over on the 8th, six days after we mailed them out. If you cut it rather fine, and wonder whether or not your vote got here in time to be counted, it probably did. We bundled up all the ballots we had after the noon mail on the 15th and sent them on the three o'clock plane to John and Jinny Morris, in Athens, Ga., to be counted on their computer. However, those received by noon on the 18th were counted here by hand, and were included in the final total. (Don't count on this next year, now—if everyone does, we'll have to count them *all* by hand!)

Oh—I should have mentioned last month, for the benefit of new Associate members, that only the Active members

Z-bar, new paint. Asking \$1200, with trailer. David O'Brien, 1909 Poyntz Ave., Manhattan, Kan. 66502—(913) 776-9087.

**WANTED:** (1) Dunlop 4.50-L-15 "Green Spor" rain tire, (1) Firestone 5.00 /7.30-16 "Super Sport Indy. Stan Czacki, 5 Edgemere Drive, Yardley, Pa. 19067.

**FOR SALE:** '63 Formcar, Balanced engine w/ cam bearings, baffles, sump extension. '65 transaxle and front suspension. R-5 Goodyears. Excellent condition. Will sell just body and chassis if desired. Robert Butte, 710 Lakeview Drive, Independence, Ky. 41051 — (606) 356-5377.

**FOR SALE:** "Panzer" prototype. Super-deep triangulated frame, wedge body, and all goodies. New. \$2100. Bob Lockhart, 1476 Kingfisher, Sunnyvale, Cal. 94087.

**FOR SALE:** Zink, with strong engine, '71 suspension, adj. hemi-joint Armstrongs, some spares. Includes log with suspension settings, dyno curves, air density graph, gearing, and tire sizes for all NE tracks. Minus engine and trans, \$1100, or complete, \$2300. Tony Scotti, 14 Ashland St., Somerville, Mass. 02144 — (617) 776-8590.

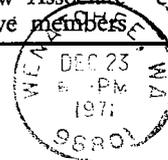
get ballots. We used to allow Associates to vote on the rules ballot, on the assumption that they would sooner or later have Vees, and therefore had a legitimate interest in the effect the rules would have on those cars. However, we got some rumbles that our vote didn't truly represent the wishes of the actual owners, so in the past few years we have restricted the ballot to owners only.

By the way—there were two or three requests for rules ballots by people who thought theirs might have been lost in the mail. It *is* possible, since we very carefully *didn't* puncture them with the staples, but it's also possible that they weren't shown here as Active Members. On your address plate there *should* be either the letter "A", or a reversed "C" (or something similar) in the upper right corner if you're an Active Member. If you are, and there isn't, please let us know, so you can vote for the Officers, at least.



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