



# VEE LINE

NUMBER 88

JANUARY 1972

## NO — NOT NEVER!

"Allowed: Polishing of the intake and exhaust ports, provided such polishing does *not* enlarge the exhaust port beyond 33mm inside diameter, and the intake port beyond 29mm inside diameter for a distance of *not* less than 1/2" from the valve seat and from the intake manifold face."

The complete '72 version of the SCCA Vee rules isn't available as this is written, but we have received the "adds" and "deletes", and by combining them with the existing rules we come up with the gem above! (Without the italics, of course.)

Cancelling out the "double negatives" we get something like, "Polishing the ports beyond 29 and 33mm *is* permitted, *less* than 1/2" from the valve seat and intake manifold face." Or by changing the "not less than" to "more than" we come up with about the same thing — "You can't go oversize *more* than 1/2" in from each end of the port."

Probably the *intent* of the rule was to *permit* "polishing" of the interior areas of the ports beyond those stated limits, as has been common practice with some of the professional engine builders, all along, even though it hasn't been "specifically authorized". In fact, if you didn't know better, you might think that such an engine builder might have had a hand in writing that section, mightn't you?

If you're not planning on not doing no head work in the not too distant future, you might not want to wait and see what happens in this area before you don't polish your ports not less than half an inch from each end, no more than the specified diameters.

## ANOTHER BOO BOO?

Although we have had Formula Vee for eight years now, there seems to have been a problem since the beginning in arriving at the proper figure for the rear track dimension. Through 1968 it was 50.7". In 1969 it was 49.3". For 1970 and '71 it was 49.8, plus or minus 1/8". For 1972 it is 49.8, plus 1/8 to minus 5/8. (Wonder why they mix decimals and fractions!)

My '64 Karmann Ghia measures 49 1/2", at hub height, with zero camber, averaging the measurements at the front and rear of the tire, so it's legal. With the plain older brake drums, that is. With the later ribbed drums it would be 1/2" wider, which would put it at 50" even, or nearly 1/8" over the allowed tolerance.

Something tells me that the tolerances should have been reversed—minus 1/8" to plus 5/8". In that case, however, my Ghia would be illegal with the *plain* drums, by an eighth of an inch!

Petunia is spending the winter with John, so I can't check her measurements. Anyone with a Vee handy care to make some checks and report in? Measure from the inside of one tire to the outside of the opposite one (which will be easier than trying to determine the exact center of each one) 12 inches off the floor. Measure both at the front and rear of the wheels and take the average, to compensate for any toe-in, or-out, at zero camber (or as nearly as possible—small variations won't make any difference when using this method of measurement).

Come to think of it—who needs a "minimum" dimension? It's only the "maximum width" that needs limits.

## FOR SAFETY'S SAKE?

There's another shock in the '72 rules for some of you — owners of Zinks and Petunia Formcars, at least, and no doubt many others. "Fuel filler necks, caps or lids may not protrude beyond the bodywork of the car."

Shucks! And we thought when we built a new gas tank and carefully fitted the filler neck so the cap would be outside the body that we were eliminating a definite fire hazard — the spilling of fuel inside the cockpit, where it flows under the seat and into other confined areas, during a hasty refueling!

Well, I'll tell you what we're gonna do! We're going to build a little "fairing" around the cap, so that the body will "protrude" beyond it, instead of vice versa. Should work on a Zink, too.

## RELAX!

The initial release to the Regions regarding the proposed realignment of classes for 1973 caused some consternation among Vee and F/F owners. Since there was no mention of those two classes at all, the implication seemed to be that they were doomed to oblivion, especially since FSV was included, along with FA, FB, and FC, under the category, "Formula SCCA".

Not so! Vees and Fords were omitted simply because they are so well entrenched that there is *no* intention of making any changes for 1973. There may be some consolidation among the other classes, but we'll go on forever!

## RULES FOR 1973

As we promised last month, this month's issue includes a couple of pages of the proposed rules which Frank Schultheis and I concocted last Fall. Most of the items are merely reworded versions of previous rules, or are relocated for better readability. Some are items which we have approved on the ballot by at least a two-thirds majority, but which have never been accepted by SCCA. (Weight with driver, for example.) A good many are simple little things we've added which are common practice, but which are technically illegal. There are a couple of items which will be new to you (rear suspension definition, for instance) and which will no doubt be controversial.

Let's not waste time and space here discussing points which obviously have majority approval, or which, by inclusion on the ballot several times have proved that they *won't* get majority approval. However, let's *do* discuss anything new, and, above all, let's bring up anything you can think of which has been left out! If you can find a loophole, by which you could do something which was obviously not intended to be permitted, or if you think of something which we're all doing illegally, which should be included, let's get it in there!

I've argued for years that the English language is capable of defining the Formula Vee rules so that there could be no question as to their meaning. Let's see if we can prove it.

OK, let's run briefly through the first couple of sections:

1. That "VW configuration" bit, which *is* in the '72 rules, originated here. However, as has been mentioned before, the powers didn't read the fine print—they didn't take into consideration a lot of the exceptions to that definition which are common practice, like removal of hubcap clips, for instance. You'll find a number of them, as we go along, but if you can bring up some more, do it!

2. "Weight with driver" got 68% approval on the last ballot, but for the benefit of the other 32%, we'll run through it one more time. Weight difference has practically no effect on top speed. However, it *does* have a *direct* relationship to acceleration. Everything else being equal, if you and your car are even 30 lbs. heavier than another car-driver combination, it will take you 3% longer and 3% farther down the track to accelerate from the same speed coming out of a turn to an

(Continued on page 2)

**NEW HEAD**

Robert Riley has sold out his interest in Lynx Cars, Inc., to Belmont Industries in Detroit. Fleet Underwood is the new President of the Lynx division.

**ANOTHER CHOICE**

Last month we presented letters from three racing tire firms, plus a brief mention of the fact that the Australian Vee Association had voted to use Dunlops, exclusively. Here is a little more dope on the Dunlops from Hank Thorp, who spends almost as much time selling Mini-Lite wheels and other racing goodies (like Dunlops) as he does on the SCCA Competition Board.

"Dear Don... As importers responsible for Dunlop racing tires for the eastern half of the U.S., we do have quantities of these tires which arrived in very late 1971 in stock at this writing. The size designations and dimensions are listed below, with our size designations being of our new metric system:

120/590x15 \$46.75 plus \$1.76 FET  
OD 23.2, tread width 4.6, OA width 6.0  
135/620x15 \$50.40 plus \$1.95 FET  
OD 24.4, tread width 5.2, OA width 6.9

Inventories now on hand are still available at our 1971 prices. I will advise you of our 1972 prices as soon as they are computed. We are still in the process of computing the total effect of the devalued dollar and are looking for ways to reduce import costs to hold prices close to our current levels.

Current compound is 356, although this may shortly be replaced by another. There is also the possibility that we may introduce a spaced version of our current front tire to be used at the rear, and produce an even shorter front one. The feasibility of this production is being investigated in England at the moment.

Dunlop Racing East Division of Hank Thorp, Inc., 1600 Woodbridge Ave., P. O. Box 201, Edison, N. J. 08817, (201) 572-1600.

(Dunlop Racing West is at 1200 Van Ness Ave., San Francisco 94109, (415) 776-7700).

**RULES FOR 1973**

(Continued from page 1)

equal speed on the straight. Since most of a Vee race consists of acceleration, this can amount to several seconds in the course of a 30 minute race. You can overcome that handicap, perhaps, with better driving, or a more powerful engine, but it is a handicap, whether you weigh 150, or 250 pounds.

(Denny Hulme, describing how he qualified his CanAm car, "... with about 15 gallons of gas aboard, the thing seemed to sprout wings. ... The light fuel load doesn't make any difference to your top speed. The main difference is how much sooner you have to get into another gear

—it makes the world of difference in acceleration.")

Lowering the minimum empty weight to 800 lbs. would have no effect on any driver weighing under 175, but would permit heavier drivers to come that much closer to making the 1000 lbs. limit.

3. There will be some controversy regarding the rear suspension definition, no doubt. Note that it requires a return to "conventional" Vee suspension for those cars now using some unusual combination of arms, links, etc., with the intent of attaining "zero roll stiffness" in the rear suspension. This will certainly be put to a vote before the final draft is made. Frank and I agreed, in arriving at this definition, that if such suspensions are all that superior, they make all existing Vees obsolete. If they are not, there is no real reason for using them. If you feel that they don't really matter enough to require a return to conventional springing, some definition should be suggested which would at least discourage further excursions into the unknown, lest someone come up with something else radical which *will* make your Vee obsolete.

Well, that's about 1/5 of the total list. Next month we'll cover the transmission and get into the engine, and we should wind it up in the March issue. Don't wait till then to make your comments, though—do it now, while you're still mad.

This is going to be too long to go in the GCR? Well, the Vee rules now take up 6 pages while the Sedan rules need 21. Shouldn't the largest class in SCCA racing be entitled to at least 8 or 10?

We'll have a ballot, just among ourselves, in midsummer, make the appropriate changes in a final draft, and then, instead of the usual Fall ballot to SCCA on individual items, we'll have a simple "yes" or "no" vote on the whole thing. If we can get 400 to 500 Vee people agreed on the same thing, perhaps it will be more effective than the divided opinions we have been coming up with. Any comments?

**COMING ATTRACTION**

There have been a number of letters lately asking about head preparation. Well, I hate to put you off, but you'll be glad I did. I've been promised an article, complete with measurements, sketches, etc., on the subject, by Neal Williams. In my book, he's the top authority on preparing Vee heads, flowtesting, exhaust pipes, manifolds, cooling, and anything else having to do with the flow of gasses. In case you didn't know, he founded the "Go Power" dynamometer outfit, back in the days of GoKarting. He also prepared the heads and manifold for Garrett Van Camp's car at the ARRC.

You'll be in for some surprises—some of the things that everybody knows just aren't so!

**SUGGESTED REVISION OF FORMULA VEE RULES****5. FORMULA VEE****5.1 DEFINITION**

A. A formula for single-seat open-wheel cars based on standard Volkswagen 1200 series Type 1 U.S. Model (imported by VWoA) sedan components, and restrictive in specifications so as to emphasize driver ability rather than design and preparation of the car.

B. No component of the engine, power train, front suspension, or brakes may be altered, modified, or changed, or be of other than VW manufacture, or be assembled in other than standard VW configuration, unless specifically authorized hereinafter.

**5.2 WEIGHT AND DIMENSIONS**

A. Weight, minimum:

1. Without fuel or driver, 800 lbs.
2. With driver and his regular driving equipment, and any fuel remaining at the end of a race, 1000 lbs.

a. Ballasting may be built permanently into the car in any desired manner.

b. Removable ballast shall consist of steel plates or bars securely bolted across the frame below the driver's legs. One bolt shall be cross-drilled for a wire seal.

B. Wheelbase, maximum, 83½ inches.

C. Track, measured at hub height, maximum:

1. Front, 51½ inches.
2. Rear, at zero camber, 50¼ inches with ribbed drums, 49¾ inches with plain drums.

D. Overall length, including exhaust pipes and/or shifter protector, 127".

**5.3 SUSPENSION**

A. Front suspension shall be standard VW, as defined herein. The following modifications are allowed:

1. Removal of one torsion bar.
  - a. Substitution of an anti-sway bar or a free tie-rod.
  - b. Replacement of the rubber seals on the torsion arms with metal thrust washers.

2. Use of any anti-sway bar(s) and associated mounting hardware.

3. Modification of the torsion bar(s).

4. Use of any tubular shock absorber which can be mounted directly on the standard mounts, provided it does not support any of the weight of the car. Shocks which are permanently "gas filled" by the factory are permitted.

5. Removal of the rebound bumper horns. The resulting holes may be filled and ground flush with the surrounding surface.

6. Removal of the original mounting brackets on the axle beam.

7. Any degree of caster. The axle beam may be adjustably mounted to the frame.

8. Any degree of camber, provided it is adjusted only by varying the width

of the spacers on the torsion arms and/or the number and location of shims on the link pins. No modification of VW parts is permitted, except that the link pin bushings may be filed or reamed to prevent binding.

9. Welding clips or brackets to the axle beam for the support of auxiliary components, and for attachment of the axle beam to the frame, or welding of the axle beam directly to the frame.

B. Rear axle assemblies shall be standard VW as defined herein. The following modifications are allowed:

1. Each axle shall be located horizontally by a single trailing arm pivotally attached to the frame forward of the axle. Axle tube and brake assembly may be rotated as desired.

2. The primary springing medium shall be a single coil spring at each side of the car, surrounding a telescopic shock absorber which shall be mounted at its lower end to the rear axle assembly and at its upper end directly to the frame.

a. The original lower shock absorber mount on the bearing housing may be modified, or it may be removed and a mount may be fabricated to suit, attached to either the trailing arm or bearing housing.

b. The upper mount may be adjustable, but must be rigidly attached to the frame.

c. At normal riding height the shock absorber may not be at an angle of more than 45 degrees from vertical.

3. Any degree of camber may be used.

4. Any anti-roll bar and/or camber controlling device may be used, provided the coil springs continue to perform functionally if such device(s) is disconnected.

C. Wheels shall be standard 15x4J as used on the 1200cc or 1300cc VW sedan as defined herein.

1. Balancing may be achieved only by the attachment of weights.

2. Hub cap clips may be removed.

D. Any tire approved for racing may be used.

5.4 BRAKING shall be by means of a dual braking system, operated by a single pedal. In case of a leak or failure affecting either pair of wheels, effective braking power shall be maintained on the other pair.

A. Any master cylinder(s), pedal, and linkage may be used.

B. Brake drums, backing plates, and wheel cylinders must be standard VW 1200 sedan, as defined herein, except that five-ribbed rear drums (Part number 113 501 615D or F) may be used.

C. Any brake shoes, brake lining and/or hydraulic brake lines may be used.

D. Handbrake components may be re-

moved and the resulting holes in the backing plates may be filled or covered. Air scoops, deflectors, etc., are not permitted.

5.5 STEERING system shall be standard VW sedan, as defined herein. The following modifications are allowed:

A. Gear box may be located as desired.

B. Any pitman arm may be used on the steering shaft.

C. Any tie rods and rod ends may be used, except that there shall be not more than one tie rod on each side of the car, connecting the pitman arm directly to the steering knuckle.

D. Steering arms on the steering knuckles may be modified, but may not be removed, relocated, or replaced. They must be used for steering in the normal manner.

E. Any steering wheel, shaft and universal joint may be used, except that the wheel must be a complete circle, concentric with the shaft.

5.6 FRAME/CHASSIS shall be constructed of steel tubing of a maximum diameter or width of four inches, and shall be of a safe and suitable design.

A. There may be no frame/chassis rigidity or strength derived by means other than the frame tubes, front axle beam, and four-point engine mount, (if used) except that:

1. The firewall panel may be rigidly attached to the frame tubes and/or roll bar.

2. The undertray (belly pan) may be rigidly attached to the frame, provided that the curvature of the undertray, measured vertically from its lowest point to the highest point of its attachment to the frame members, may not exceed one inch.

B. Stressed skin, monocoque, or semi-monocoque construction is not permitted.

5.7 BODY shell shall be of sheet metal and/or fiberglass, and shall incorporate removable panels or sections to permit inspection of all mechanical components.

A. No part of the frame or body may extend beyond a vertical plane passing through the inner end of the rear axle bearing housing and the inner side of the upper front shock absorber mount.

1. The firewall must be larger at all corresponding points than the cross section of the engine, taken through the fan shroud. Holes may be incorporated only for the passage of frame tubing, wiring, brake lines, fuel and instrument tubing, controls, shoulder harness attachment, and fasteners, provided they are no larger than is necessary in order to serve their primary purpose. Holes for the passage of air are not permitted. The primary function of the firewall is to isolate the engine compartment from the forward part of the car.

(To be continued next month)

**MEMBER'S SOAPBOX**

"Dear Sirs: I would like to inquire where I may be able to obtain a set of plans for a Formula Vee. I presently have the parts necessary for the construction of the car, but need some guidelines for the best methods of assembly.

David Kalina, McKeesport, Pa."

*Dave (and all other would-be Vee builders) my advice, in a nutshell, is, "Don't"! ESPECIALLY if you need plans and guidelines. Not if you want to race, at least—if you just want a hobby project to spend your time on, go ahead, but if you're considering it as your first step in getting started racing, forget it!*

*In the first place, unless you can spend full time on it, you'll be a year or so in the process, and will tire of it before you get it finished. In the second place, unless you have enough experience and equipment to start from scratch, it's unlikely that you can come up with a car which you'll really like, or more important, that anyone else will want if you want to sell it. In the third place, it will cost you more than it would to buy a used car, ready to run.*

*You can get a pretty fair car—older, perhaps, but in good shape—for less than the cost of a kit, and probably for about the cost of the materials if you build your own. It will have some kind of racing tires on it, mirrors, and all those other extras; it may have at least some of the basic engine work done, like a lightened fly-wheel, proper carb and distributor, and perhaps even prepared heads; and even more important, even if it needs a little work, chances are that you can get started in a driver's school with it THIS season.*

*Get a good used car, or a "dog" that you can fix up fairly easily, and get started racing. Don't even spend the time and money to build up a racing engine—if a stock engine is among the parts you already have, use that and work on a "real racing engine" based on the one in the car, in your spare time. If you are a fast learner, you MAY develop your driving to the point where you're ready for a good engine by the time the engine is ready for you. In the meantime, you may even find yourself passing later and better prepared cars, even with your stock mill—IF you're a good enough driver. If not, the engine won't make up the difference.*

*At the end of your first season, after you have learned something about Formula Vees, you'll be a lot better qualified to build a car, if you still feel that's the way you want to go. Or perhaps you'll just want to remodel the one you have. You'll have found that the steering wheel is too close to your thighs, and you bark your knuckles every time you shift gears and your left knee hits the frame when you use the clutch, and you'll know just what you want to do for next season.*

"Dear Don... I'm in the process of building a car which I began designing

(Continued on page 4)

**MEMBER'S SOAPBOX**

(Continued from page 3)

about 18 months ago. After about 6 months of design and redesign I actually began construction. The car is now about 50% complete. I'm the wise guy who decided there's more glory if you design, build and drive your own car...

I was at the ARRC, where I spent most of the time in the paddock area, asking questions and getting in the way, but I did see that long gap between Van Camp's Lynx and the second car. Do you think the stovepipes actually helped that much?

You mentioned the desirable number of cooling fins as 18 per cylinder. Mine have 12 fins—is there a 13-fin barrel?

James Barker, Signal Mt., Tenn."

*Thanks for the backup on that building bit, Jim. Very timely!*

*Probably any initial velocity which can be given the air entering the fan intake is beneficial, in that it cuts down on the power requirements for the fan. We tried a scoop-and-duct arrangement on Petunia once, and made a round trip run of a couple of miles on an old country road with no fan belt at all. There was a very definite power gain, like a couple of hundred rpm, but the engine was smoking at the end of the run. The fan, acting as a turbine, spun the generator, but not fast enough to put out the red light.*

*The rules this year may very well be interpreted as requiring fan belts installed "in standard VW configuration". The VW manual says, "The belt, when firmly pressed with the thumb at midpoint, must yield approximately 15mm (0.6")". In order to forestall future deviations toward ram ducts taking over the function of the fan, should we insist on this interpretation? Or should we all start experimenting with other systems? Be thinking about it—it will come up in our rules proposals in a couple of months.*

*I don't know exactly what Garrett Van*

*Camp was using, except that he had two scoops on the sides, rather than one on the top of the car, as several others had, but I doubt that it had very much to do with that 20 second lead. The way I heard it, he had some pretty fair driving going for him, too, as well as a car perfectly prepared in other areas.*

*Pictures in the VW manuals show cylinders with 11 fins. These could very well be from the 30 hp engines, however. I wouldn't bet on it, but I believe our first ones had 13 fins. Yours could very well have 12, though—VW changes are often made in small steps.*

"Dear Don... I recently purchased a used Vee and was advised by the previous owner to use SAE 90 multipurpose transmission oil made by Chrysler. He said to fill the transmission so that you could touch the top level of the oil when you run your index finger down as far as possible in the filler-hole.

Is this enough oil in the transmission to prevent damage? Does the use of a heavier oil slow you down? What is the recommended procedure?

Robert Morris, Muncie, Ind."

*Obviously you don't have a complete set of VeeLines, since that was among the first items we mentioned seven or eight years ago. Go to your nearest International Harvester dealer and get yourself a gallon of "HyTran". It's about 10-weight, and will scare you when you start to pour it in. Don't worry about it—it was developed for tractor transmissions, which are surprisingly like a VW transporter transaxle, except that the reduction gears at the wheels are included in the gearcase. They are subject to a lot more abuse than your Vee will ever see. In addition to lubing the gears, in the tractor the oil also is pumped through the hydraulic system to operate the various tractor attachments, which is the reason for its being so thin.*

*If you can reach the oil level, it's high*

*enough. When those gears get turning, that old oil is flung every whichway. (I use my little finger as a measuring stick, since I don't want to leave it in the hole.)*

**UNCLASSIFIED ADS**

**FOR SALE:** Formcar. Many extras, including extra engine for parts. No reasonable offer refused. Bob Barletta, 15035 Artesian, Detroit, Mich. 48223, (313) 272-5445.

**FOR SALE:** '70 Zeitler, like new. Raced one year, never bent. Engine professionally maintained. With tilt-bed trailer, eight mounted Goodyears, custom cover, some spares, \$2200. Arthur Holt, 4037 Majestic Lane, Fairfax, Va. 22030, (703) 378-5868.

**WANTED:** Formula Vee, wrecked or needing work. Prefer Zink, but others considered. Must be reasonably priced, and within 500 miles. Chuck Haines, 5846 Glen Hill Drive, Bethel Park, Pa. 15102 (412) 833-1584.

**FOR SALE:** Beach MK5C, A-1 condition. Cc'd, dyno'd, 3 races on rebuild. Z-bar, good rubber, 4 extra mounted tires. With trailer, \$1500. Bill Deters, 10800 Emerson Rd., Bloomington, Minn. 55431, (612) 888-1919.

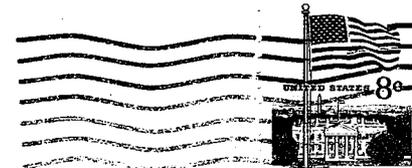
**FOR SALE:** Huron Vee. Race ready, 3 races on new engine. \$800. John Cramm, 1868 Main St. W., Apt. 1012, Hamilton, Ontario, Canada, (416) 527-5279.

**FOR SALE:** "EDGE" Vee sports racer (VW based "C" Sports Racer). Fastest cornering car in the N.E. Roller crank, Webbers, cam, fuel cell, roll cage, etc. \$2700. E. Givler, 5 Melrose St., Boston, Mass. 02116, (617) 542-0077.

**The VEE LINE of  
FORMULA VEE INTERNATIONAL**  
DON CHEESMAN, Director  
1347 Fairmont Ave.  
East Wenatchee, Wash. 98801  
1972 Formula Vee International



**Formula Vee  
International**  
1347 FAIRMONT AVE.  
EAST WENATCHEE  
WASH. 98801



Warren A. Roberts  
5927 E. 127th St.  
Grandview, Mo. 64030

A  
7