



# VEE LINE

NUMBER 54

MARCH 1969

## MORE FROM THE SCCA CONVENTION

One item missed last month was the announcement, and movies, of a rather spectacular advance in fire extinguishing equipment. In fact, it could almost be called fire *prevention* equipment!

Basically, it consists of a bottle of Freon (a relative of the Freon used in refrigeration), a solenoid valve to control the flow of the gas through strategically located nozzles and a sophisticated electronic sensor which can detect the heat and light from a fire (and distinguish between a fire and sunlight) to actuate the solenoid, practically instantaneously.

The gas is harmless—in a test it was shown extinguishing the flames in three kerosene lanterns scattered about a room while two men, calmly breathing the resulting atmosphere, discussed the demonstration.

There is one little drawback to the system—it is presently priced at \$600-plus! In a discussion later in the evening, the agent agreed to investigate the possibility of substituting a simple impact or "roll-over" switch, or even a manually operated valve, in place of the expensive electronic mechanism, for use in Formula Vee. If I hear from him again, I'll let you know.

## FORMULA FORD

I erred in quoting a "retail price" as being included in the Formula Ford rules. As with Formula Vee, the informal rules originally proposed for it were not exactly the same as those adopted by SCCA. There is *not* a price limit.

In fact, one advertisement states that it is "available in several forms to suit the budget and taste of the individual owner." The "budget" form is quoted at \$2,995, but with the optional extras you can pay as much as \$4,345. And that's still what you might call a showroom model! Where you go from there is your business. (What do you suppose one could do with the economy model?)

With the half-dozen English imports, there are already nearly as many makes of FF, as there are of Vees. In addition, Beach is now building one, Bobsy has given up Vees entirely and is going to concentrate on the FF and even Ed Zink is reportedly toying with the idea.

## THOSE McNAMARA VEES

McNamara Racing (Germany) has announced a couple of additional distributors for its cars in the U.S. On the West Coast it's Bill Simpson, in the Midwest our Vice President, John Beck, and in the East, none other than Ed Zink's prize demonstrator, Bill Scott! This should lead to some interesting discussions on, "Is it the car—or the driver—that's more important?"

## DIRECTOR'S CORNER

As I've said before, I don't really object to building a set of exhaust pipes. In fact, it has been fun. And if it turns out to be the accepted standard for Formula Vee, my satisfaction will know no bounds! I'm sure many others of you who have the facilities, time, money and inclination to experiment feel the same way. On the other hand, I know too that there are many of you to whom such a project is a momentous undertaking. I sincerely hope that this system will be a huge success for your sake, as well as my own, and that you will be enabled, by the suggestions printed here, to continue to stay equal. That is what FVI is for, after all, and presumably why you support it.

I would hope, then, that you would encourage others interested in sharing any benefits you find here to get their information directly from its source—by joining and supporting FVI as you have been doing.

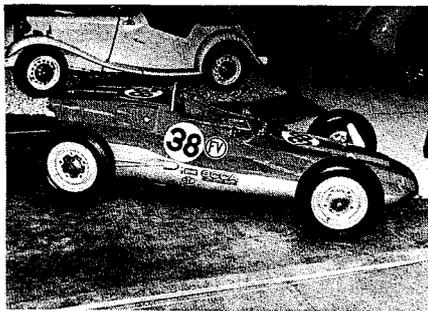
## PRECAUTION

I hate to admit this, but perhaps there is someone else somewhere who might make the same error sometime. So, whoever you are:

When cleaning the crankcase in the course of an overhaul, don't forget to dismantle the pressure relief valve—the large slotted-head plug in the bottom front of the case. It forms a nice pocket for chips of the disintegrated bearings which probably made the overhaul necessary. (Voice of experience.) Remove the oil temperature sender, too, if it is installed in the oil pump intake.

In the absence of a "hot tank," compressed air, and other such professional aids, your local do-it-yourself car wash makes a good substitute, especially if it provides plenty of detergent and really hot water. Be sure to direct the full force of the water through all the oil passages, in both directions where possible. You can probably borrow enough air at your local service station to blow out the last of the water on your way home.

It is generally considered routine to replace the oil cooler after a bearing failure, due to the possibility that chips may have been trapped in its passages. However, if, like us, you can't bring yourself to throw away a perfectly good \$10 cooler, the same treatment *seems* to work on it, too. (It's not guaranteed.)



*The "Katze" Vee, soon to be introduced by Vee Engineering, Box 36, New Haven, Ind. This prototype was thoroughly wrung out last season by its owner, George Wessel.*

## AN ANSWER ON DAYTONA

"Dear Don: The rumor mill is sure working hard on what happened at the Daytona Vee Race. Many rumors are based partially on fact; but in the telling and retelling, the truth is often distorted somewhat. Here's what really happened regarding the modified carburetor tops:

"Prior to the races (I think at Tech, but it really isn't important) a number of competitors were informed that their carburetor tops were illegally modified and that their cars would not be permitted to run in this configuration. The modifications involved rounding the edge of the intake as shown on the attached sketch and enlarging the accelerator pump nozzle. All cars known to have these modifications were corrected prior to competing. (All VWs in junk yards in Daytona are now minus carb tops!)

"After the race, a teardown was ordered for the first four cars. Carb tops were removed, marked with a "Magic Marker" and placed on a bench in the Tech area. All were inspected and found to have standard unmodified accelerator pump nozzles. One carburetor top was found to have a slight modification at the point where the air intake "bowl" meets the venturi insert (see attached sketch). The other three were unmodified. The Stewards were prepared to disqualify the offending car, but here's where the problem came in. The car numbers written with "Magic Marker" rubbed off from handling by officials and the various competitors (control over who was in the teardown area was very poor). The officials were, therefore, faced with the problem of having found an illegally modified carburetor but with no way of knowing which car the part was removed from. Naturally, none of the four drivers would claim the part, so no action could be taken.

"As you can see, the problem at Daytona was one of lack of control over the impound/teardown area. Had the parts been tagged and kept from the hands of bystanders, the offender would have been penalized.

"It seems to me that the rule on the charging function of the generator is pretty clear. How about starting a race with an over-

*(Continued on Page 4)*

## MEMBERS' SOAPBOX

"Dear Don: Is there a special trick to the removal and refitting of the engine in a '64 Autodynamics? It is really a close fit, requiring the strength of two men and the patience of a saint!"

John Pitman, Brooklyn, N.Y.

I've never seen it done, but as I recall, with that model you're supposed to loosen the transmission mounts and take the transmission off the engine, rather than the engine off the transmission. If you're doing it the other way around, you must be understating your capabilities. Any better ideas from other AD owners?

"Dear Don: When putting the cylinders back over the pistons I use a 39-cent four-inch worm-screw-type hose clamp instead of a \$5 to \$10 ring compressor. Just make sure there is plenty of lube on it."

Bob Antanaitis, Jr., Brooklyn, N.Y.

Thanks, Ben. We'll add one to our Special Formula Vee Tool Kit. We were doing it by hand, using fingernails and the taper at the bottom of the cylinder, until we broke an oil ring last trip.

"Dear Don: . . . We measured the tuned exhaust system on my Vee with a tape on the outside of the pipes, following the curves on the outside, from each port to the end of the megaphone. Pipes from the two rear cylinders have a 57" total length, the front ones have a 58" total length from port to end of the megaphone. (Four-into-one system.)

"The megaphone itself ends about 3/4" past the end of the rear body section. Guess I'll have to cut off 3/4" if anybody gets picky! "Hope this isn't too late to be of help."

Bruce M. Belcher, Boise, Idaho

No, it's not too late, but I can't say it helps! Just one more figure to throw in the pot! It was Bruce who mentioned last month that his new Autodynamics system hadn't been tested, but certainly didn't "sound like a Vee." Bet our Vee sounds louder than your Vee, Bruce.

Ed Zink's advice to "his" drivers—"On the first lap, take the inside, *regardless!*"

"Dear Don: . . . Unfortunately I won't be running at Daytona, since my leg will just have come out of a cast. Personally I can't get too enthusiastic about the race when the smell of all that money is attracting participation by entrants who really have little, if any, interest in the furtherance of Formula Vee.

"Our local hero Porsche dealer/driver has purchased a Vee, and has expended considerable amounts of money and time on it because of the plum being dangled, in the form of \$7,000-plus. He intends to sell the car immediately after the race! Most of the VW dealers in Jacksonville are preparing cars also, virtually all of which are illegal!

"Oh, well, despite all this, I guess I'd be there if I could.

"My engine is presently torn down and a VW mechanic and myself are preparing it for this summer. Boy, was I surprised to find that I'd been running illegal, with oversize cylinders and a reground cam! Guess I should have torn it down before I bought it, but anyway it'll be legal when it's put together again.

"I share your feelings about the exhaust

system rule change. Looks as if we'll be going the same route of experimentation that you will. I don't have access to a dyno either, unless I'm willing to pay through the nose for it.

"I'm really looking forward to this coming season, and I'm sure all that good dope you've sent me will be well worthwhile. Thanks—"

San Irlandi,  
Frog Hollow Rd., Orange Park, Fla.

"Dear Don: . . . Please disregard notice of sale of my Vee. (VL No. 51). I'll still sell it, but I don't really wanna."

Bob Adams, Phoenix, Ariz.

I understand — Spring is arriving here, too.

"Dear Don: . . . In re the controversy over whether or not Vee racing is a contact sport, at the Nov. 23-24 Regional at Marlboro, Md., the Chief Steward warned the Vee drivers about contact before the race, recalling the incident at that track wherein a National Vee race was stopped because of excessive contact. After this warning and the subsequent race, a very excited Chief Steward again called a meeting of Vee drivers to proclaim that there had been more contact in the Vee race than in any of the others on the card. He announced that henceforth at Marlboro there will be a 'contact log.' Both 'contactee' and 'contactor' will have their names entered in the log. A second entry rates a black flag for the offending driver. He did not say whether the points earned were cumulative for the season, or if everyone starts with a clean slate at the beginning of each race.

"Despite the obvious inequities of this system (what happens if you get hit twice?), I am wholeheartedly in favor of it. Vee drivers in the Northeast, at least, with its large starting fields, have earned the reputation of being rather over-aggressive, particularly at some of the tighter tracks such as Bryar and Marlboro. (Overheard on the grid at Thompson—"Here come the Kamikazes!")

"Needless to say, something has to be done. If the drivers are unwilling to do it, then the officials have no choice but to correct the situation or else stop allowing FV to race. I applaud the concept of the contact log, although the action would have been more effective had it come from the drivers themselves."

Frank Schafer, Boston, Mass.

## RETRACTION

OK, I goofed again! There have been several letters protesting that the 125 drivers listed in "Sports Car" as National drivers perhaps represent even less than half of those Vee drivers who hold National licenses. That has to be true, of course! How many more there are is anyone's guess; but, for instance, there had to be at least 29 of them in the Daytona race. OK?

The VEE LINE of  
FORMULA VEE INTERNATIONAL  
Don Cheesman, Director  
Box 291  
Ephrata, Washington, 98823

## THE FVI SUPER-KING-SIZE SPECTATOR IMPRESSOR

Well, we have now done our bit to popularize the sport of automobile racing with the general public! We have achieved the impossible! We have evoked noise from a Formula Vee! I mean NOISE—like the kind that makes you cuss the Sports Racer driver three pits away, knowing he'll never be able to hear you above all that racket! It's like the "rap" of a truck going downhill, except that this is uphill! It comes on at around 3200 rpm, fades to a smooth roar as engine speed increases and then starts blatting again at about 4700, which, by some strange circumstance, coincides with the predicted "tuning range" for the length of pipe we used—96 inches of pipe, plus three inches of port, or a total of 99 inches. (Check the figures in VL No. 51.) Very possibly we will shorten it slightly, to raise the noise level to about 5000 rpm, eventually; but we started with the pipes longer than we considered actually necessary, on the basis that it's easier to shorten them than it is to stretch them.

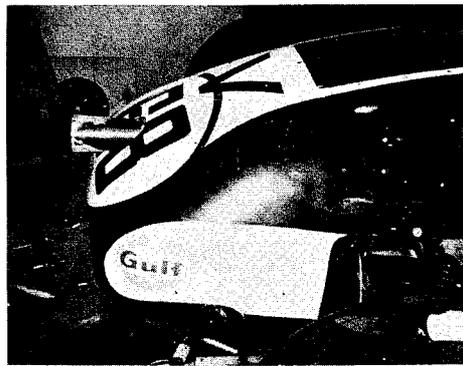
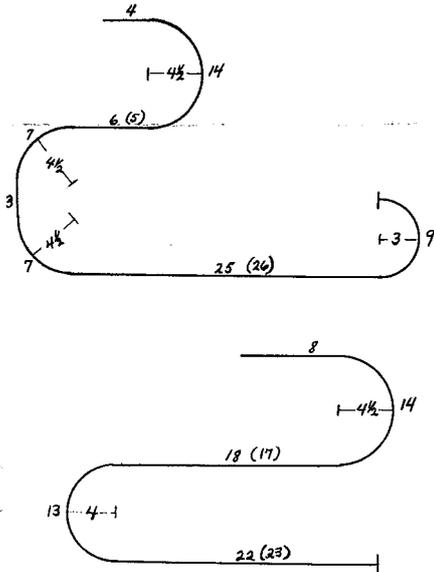
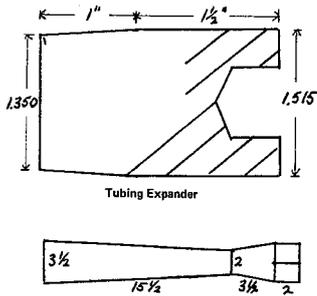
As shown here, this is still in the experimental stage. When the optimum length is finally determined the slip joints (except the one at the megaphone) will be discarded and the sections will be welded together; but this VeeLine has been delayed too long already in order to include this much scoop, so you get the half-baked version for now.

Primarily this is for Formcar owners, but anyone else who can find space for 26 ft. of plumbing in his engine room is welcome to it too, of course. (FVI members, that is!) The plan sketched in No. 52 VeeLine didn't quite work out that way in practice, with the front pipes routed *over* the cylinders—it would have been necessary to relocate the starter and the sparkplugs. Using the original pipes in their original position proved to be much simpler, but due to the change in plans, the 2 1/2" radius bends we had ordered weren't long enough, so they had to have a section spliced into the middle. If we were nearer to a source of supply, we'd get a couple of 4"-radius ones, instead.

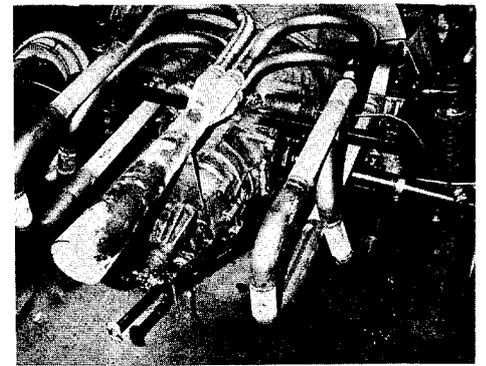
Bends are specified by "radius," to the center of the pipe, in case you want to calculate their lengths yourself. (Dimensions in the sketch are to the nearest inch.) Or you can measure by running a steel tape through them, pulling it tight to get the inside measurement, pushing it out against the outside of the bend, for the outside measurement, and then taking the average of the two readings. Measurements shown here are to the start of the bend—the straight sections on the bends are included as part of the total straight length. Use the measurements in parenthesis for the left side of the engine in order to compensate for the offset of the cylinders.

There was nothing particularly difficult involved (except getting the lengths to come out equal), nor were there any particular problems. Of course, we have cut off the rear of the frame, which might possibly be in the way if you still have it. However, it should be possible to bend the pipes toward the transmission case to clear the braces if necessary. With the use of several long slip-joints and tubing salvaged from the original pipes, there was enough material available for the straight sections without buying any additional. That, and the megaphone donated by Volkswagen of America, made the job very inexpensive—

about twelve dollars for the bends and half a dozen slip-joints.



"...1 to 3" behind the rearmost part of the body."



27 feet of plumbing...

number of hose clamps and a hammer, draw the two edges together. Using a piece of heavy shafting or a length of 1 1/2" pipe for an anvil, you can round out the horn as nearly perfect as possible before welding. If you weld it with the edges at an angle to one another, it will be more difficult to round it up afterward.

The transition piece is something else. It, too, could be made up from a piece of the same tubing, but it will take a lot of blacksmithing. Probably the way to go would be to buy a "collector" section also. Whitney has one which could be used with some alteration. It fits 1 1/2" tubing, but is 10" long, and 2 1/2" in diameter at the outlet. With room for a maximum of two feet of megaphone, you'd probably want the collector section much shorter, and, if you wish to duplicate the "venturi" shape of the one shown, of smaller diameter. By cutting out wedge-shaped sections (with the points lined up with the creases between the tubes), it shouldn't be too difficult to shrink it down to the desired size. You'd probably want to weld in four short lengths of slip-joint-size tubing, with a filler in between them, too. Unless you plan to make the system a permanent part of the engine, it

will have to come apart somewhere, and this is the logical spot.

OK, OK! So you've been skipping the details looking for the dope on performance improvement. I'm sorry, but there isn't any. Dope, I mean. And if there is any improvement, it will have to be given in general terms—our nearest engine dyno is in Seattle, 200 miles away (open Mon.-Fri., 8 to 5, \$12.00 an hour). So our performance evaluation will be done at the track, at our first race of the season. (That will be before our competitors get a chance to read this—even if we don't show any improvement, we'll scare heck out of them for a few minutes!) Theoretically, that "tapping" sound indicates the onset of a resonant frequency, which is supposed to be the point at which the exhaust impulses suck the guts out of the carburetor, but we'll see how it works out in actual practice. If any of you foolhardy people try this, and do have access to a dyno, I'd appreciate a scientific report.

In the meantime I will state, without fear of successful contradiction, that we now have the world's noisiest Vee! And noise, after all, is the most important consideration. Isn't it?

Speaking of slip-joints, even if you intend to weld up one-piece pipes right off, you'll find a few slip-joints very handy for fitting purposes. The J. C. Whitney Co. (VL No. 51) has both long and short ones. The short ones would be fine for fitting; but if, like us, you'd like to experiment a bit, the long ones would be handier. There's just one catch—they're swaged (enlarged) only at the ends, with the center section of standard 1 1/2" tubing. In order to make an adjustable trombone-type joint, the center section, too, will have to be enlarged.

This isn't hard to do, with a simple tool like the one shown. It's a simple lathe job, made of mild steel. For the amount of use it will get it needn't be hardened, and you don't even need a press. With a large punch—and plenty of STP—you can drive it through the center section with a heavy hammer. The recess in the large end is for centering the punch. It will put a curve in the pipe if you apply the force off center.

The megaphone would be the trickiest part to fabricate. (This one is from the German system shown last month, so we were spared that task.) The horn could no doubt be rolled up at most any sheet metal shop, or could be fabricated from a length of 4" tubing. Start with 16" of tubing, cut out a section 1 1/2" wide at one end, and half the circumference of the pipe at the other. With a

UNCLASSIFIED ADS

FOR SALE: VW components, complete, for Vee. Late engine, transaxle, front suspension, wheels (with Goodyears) spares, all for \$295. Never wrecked. Four mounted Firestones, good condition, \$95. C. Haines, Rt. 3, Mt. Vernon, Ohio 43050 (614) 397-6781.

WANTED: Used tires suitable for driver's school and a race or two. Tom Hanes, 2702 Homer Ave., Erie, Pa. 16506. (212) 833-1752.

FOR SALE: Mabi Vee, butterscotch, 2 races on legal dynotuned engine. Goodyears and Pirellis, Koni and adjustable Armstrong shocks, tuned exhausts, tonneau cover, trailer \$1900. Burt Richmond, 75 E. Wacker Drive, Chicago, Ill. 60601 (312) 263-6884 or 869-1437.

FOR SALE: Londergan Vee (much modified Formcar). New front end, rebuilt transaxle, Goodyear R-4's, aluminum tank behind seat, cycle battery, tuned exhaust system and a few spares. Never bent. \$650, less engine. Dr. F. E. Bonner, 7627 Pleasant Manor Drive, Pontiac, Mich. 48054 (313) 682-7898 or 273-4525 (day or night).

FOR SALE: Beautiful blue & gold Formcar. Spare wheels and Indy Firestones. With trailer, \$1100. Ken Gunther, 422 E. Harding St., Cocoa Beach, Fla. 32931.

FOR SALE: Autodynamics Mk III, improved frame, extra heavy roll bar and braces. Rebuilt engine, adjustable rear camber. Ready to race, with trailer, \$1800. David J. Lichius, 8520 Joseph Ave., St. Louis, Mo. 63144 (314) WO 2-7647 (after 6:00 CST).

WANTED: Please lend your full set of VeeLines. Will return unharmed with an extra set of Xerox copies. Harry Griffith, 5514 Floyd Ave. Amarillo, Tex. 79106.

FOR SALE: All back issues of the "VeeLine" are kept in stock. 25 cents each, postpaid. Extra jacket patches, metallic emblems, or large "FV" emblems, 50 cents each. (Members only, of course.) FVI, Ephrata, Wash. 98823.

FOR SALE: '69 Autodynamics Mk V, Koni shocks, R-4's, special exhaust system, latest Z-bar suspension, long distance fuel tank (removable). Never bent. Bob Russell, 209 Newbury St., Boston, Mass. 02116. (617) 267-4333.

FOR SALE: Autodynamics Mk IV, Cassis engine, Koni shocks, Firestones, many extras. With trailer, \$1600. Ed Meloni, 81 Sagamore St., So. Hamilton, Mass. 01982 (617) 468-1708.

**AN ANSWER  
ON DAYTONA**

*(Continued from Page 1)*

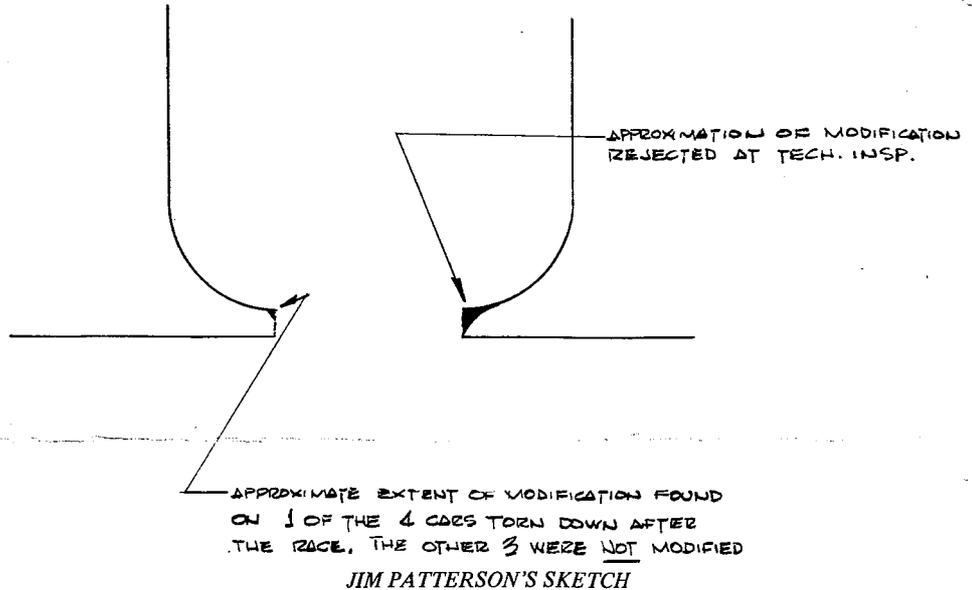
charged battery? Chances are that the generator would not be called upon for current even with a totally stock regulator. Universal understanding and application of the rules is, of course, a prime goal of any racing organization. We've come a long way, but it's a big country and there are a lot of ingenious guys out there looking for the competitive edge. As long as these factors exist, I expect we'll have rules problems. The trick is to keep them down to small problems so that the concept of the class isn't destroyed."

Sincerely,  
Jim Patterson,  
Director of Club Racing, SCCA

Thanks, Jim. As you—and others—have said, the conduct of some portions, at least, of the Daytona Vee race was somewhat less than might have been expected of an event of that magnitude. However, that is water over the dam. The important point, for most of us, is that modification of the carburetor tops was *not* condoned, but was considered to be an illegal modification of the carburetor body, no matter how slight the modification. It has been reported that there is a mysterious shortage of VW carburetor tops around Riverside, California, too, indicating that this modification isn't exactly a rare occurrence.

I'm going to argue with you again (as you knew I would) on the generator rule, Jim. If, as you maintain, it permits the use of worn-out brushes, re-calibrated voltage regulators, overcharged batteries, or any other such subterfuge, in order to circumvent the "normal battery charging function of the generator," then it is *not* clear! It is being used by the "ingenious guys" against the conscientious ones, to gain that "competitive edge." It *must* be reworded, so as either to *require* normal generator functioning, or to *permit everyone* to openly and legally use non-functioning generators. Any rule which is open to diametrically opposite interpretations can only be considered ambiguous! Are generators required to function, or are they not?

FORMULA VEE - CARBURETOR TOPS  
DAYTONA 2-1-69



**FIA LICENSES**

Well, there's nothing too difficult or mysterious about obtaining an FIA driver license, after all, although there is at least one surprise. In order to enter a car in an FIA-listed event, both the driver and the entrant must hold the appropriate FIA licenses. If you happen to be *both* the entrant and the driver, you must have *both* licenses. Apparently, however, you could "enter" a friend's car, as well as your own, if he had the driver's license, and didn't mind your appearing to be some kind of sponsor.

Licenses are obtained (for SCCA members) directly from SCCA, at Westport. You ask them for *both* entrant and driver application forms, two photos, your National license (or a photocopy) and \$10 are required for the driver's license. For the Entrant's license, skip the photos, but include another \$10.

**HOW MANY VEES?**

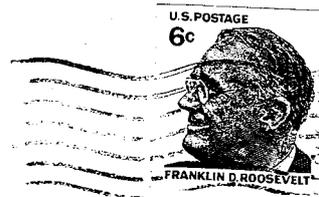
Joe Hoppen, who is VWoA's liaison man for Formula Vee, recently conducted a survey among all known Vee builders, past and present, and reports that there have definitely been 2070 Vees built in this country, on a commercial basis, as of Dec. 31, 1968.

George Eickhoff, Director of the Southern Pacific Division Formula Vee Association, has also made a survey which indicates that there are a substantial number of additional one-ofs running around loose. His list contains 58 names of Vees, 35 of which have been made in quantities of two or more. (Foreign cars are included, but 25 were built in the U.S.) Among the singles are such gems as "Bubonic," "Ardvaark" and "Basket Special."



**Formula Vee  
International**

BOX 291  
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WASH. 98823



Warren A. Roberts  
3513 NE 67th Terrace  
Gladstone, Mo. 64119

A  
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*Got here*