



VEE LINE

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FINAL FVI BALLOTS TALLIED

THE BILL SCOTT INVASION

(This trip to Europe was made at the joint invitation of Formula Vee Europe and Volkswagen of America, to whom I am very, very grateful! It was wonderful! Also supporting Bill Scott were Arthur Railton, vice president, public relations, Arthur Ross, dealer and industry relations manager, and Joseph Hoppen, liaison engineer, all of VWoA. Joe got his start as a teen-age apprentice in a German VW shop, and still swings a mean wrench. With him looking out for me—translating, reading menus, pointing out things of interest—travel in Germany was a snap. In what follows, “we” always includes Joe, if not all four of us.)

Last month’s “flash” on Bill Scott’s win at the Nurburgring was pretty brief. It was “telexed” across the Atlantic while we were still in Europe. Would you care for a few more details? OK!

As was mentioned, this was the final race of the season for the Volkswagen Cup series. Points are gained in races throughout Europe, all through the season, as we do in our Divisions for National points. This race is not a runoff, then, as is our ARRC, but is the final race at which points may be won, and at which the final placings are decided, so it is understandably *the* event. There were some motorcycle races, and one event for Group 7 cars, but the main event, featured on all the advertising posters, was the Formula Vee Championship race on Sunday. Bill, having entered only three previous races in Europe, didn’t have a chance at the Championship, of course, but he wasn’t racing just for honor, either. First prize was a ‘69 Beetle.

The Nurburgring is probably much as you imagine it to be from what you have read about it. It is essentially a country road winding up and down hill, through woods and farmland. Except when races are being held, it even has civilian traffic on it—one way, of course. Anyone with a car and a few deutsch marks can drive the course, and thousands of people do. It is actually composed of two courses, so arranged that either or both can be used as desired. The North course is 14.3 miles, the South course 4.8 miles, and when they are combined the course becomes 17.3 miles long. (Bill drove the long North course when he came in second in the August race; this one was on the shorter South course.)

The start-finish area is 1000 feet above the lowest point on the course, and the entire course is either uphill or downhill—even the start-finish section is slightly down grade. Incidentally, this is also the longest straight, at .6 miles. Altogether there are 176 curves, which averages out to about one for each tenth of a mile! It’s definitely a course which sorts out drivers.

The “paddock” is over an acre of black-

DIRECTOR’S CORNER

Well, I’m glad *that’s* over for another year. Next time the ballot will have only one question, “Do you like Formula Vee?” It will simplify counting no end! With the late ballots we got just over a 60% return, which seems to be the usual figure. However, of the 724 ballots sent out, only 417 (58%) were returned in time to be counted. If yours got here by Oct. 6, your vote was included. If not, you’ll do better next year, won’t you?

Not many surprises this time, really (see page 2). I thought perhaps there would be more interest in “highway” tires, and the tolerance toward present “monocoques” was more than might be expected. Otherwise, the vote can only be taken as an endorsement of the present rules, with some of the remaining ambiguities ironed out.

I have a feeling that “SCCA” (the Car Classification Committee, the Competition Board, and the Board of Governors, all of whom review these proposals before their adoption) will do a good job for us this year. There have been several inquiries about specific points and expressions of cooperation from these people. It has been obvious in the past that they have had FormulaVee’s best interest at heart, but I believe that this year, in addition, they are showing more respect for what we consider to be our best interests. It figures; each year our ballot count is representative of more Vee owners than ever before (last year 314) and each year, I believe, our requests have been more reasonable. Our opposition to actual change has been repeated year after year, too, which gives them every year more encouragement to hold the line. Yep, Formula Vee is here to stay!

Isn’t voting fun? We’ve got this ballot out of the way, and probably before you get this you will have done your political voting; but you’ll still have a chance to vote once more. We elect officers again, remember?

To review for the members who weren’t with us last year at this time—we have an Executive President, an Executive Vice President, and an Executive Secretary, whose very few duties are spelled out in the Constitution. Their chief reason for existence, however, is to ensure the continuity of Formula Vee International. Should the office of Director become vacant for any reason (they can fire him, if they see fit), it is up to them to provide a replacement and make all arrangements for his taking over his duties. I hope that they won’t have to do a thing in the foreseeable future, but they should be people who are able and willing to act if it should ever be required of them.

So—nominations are now in order! If you nominate others, be sure they meet the simple requirements mentioned above. Or volunteer yourself. Don’t be bashful! We already have two volunteers for President—Bob Ames, our present Vice President expressed his intention to run some time ago; and in today’s mail, John A. Beck, of Mason City, Iowa, throws his hat in the ring. Let’s have some more. Campaign speeches and the ballot will be included with the November issue, which will go to press about Nov. 15. (I hope.)

top, surrounded on all four sides by a continuous string of garages of reinforced concrete, with steel roll-up doors and electric lights, yet! I don’t know how they were assigned—some of the crews managed to have a garage all to themselves, while others (including ours) had up to four cars in them. Work was facilitated by pushing outside the cars not actually being worked on.

When we arrived there about noon on Friday, Bill was already renewing old acquaintances and making new ones—a faculty he has which isn’t hampered at all by the fact that he doesn’t speak German. (He says he has learned a lot of nouns, like “wrench,” “tire,” “oil,” etc., since the first race.) Actually, in the paddock the principle means of communication was sign language, anyhow. It seemed that there were always from one to six racing bikes tuning out in the center of the area, and with those exhausts echoing off the concrete walls — —! (Incidentally, where do you suppose they find the people who are willing to ride on those racing sidecars?)

You know already that Bill was using a 1300 engine (actually a cross between 1200 and 1300 as is used in Europe) prepared by a German engine builder—“Mahag”—but perhaps you didn’t know that Mahag had a team racing there, too. (Germany’s well-known girl Vee driver, Hannelore Werner, was driving one of their cars.) Anyone might have supposed that Bill was a part of their team! We borrowed their tools—Bill didn’t have so much as a screwdriver with him—and they came in every once in a while to check valve clearance, timing and anything else they happened to think of, just as they were doing with their own cars. There was a practice session Friday afternoon (in the rain) in which Bill’s lap times were good, but not the best. The Mahag team brought over an engine which they had found showed more power on the dyno than the one Bill had, and urged Bill to use it, instead. So until well into the evening, we changed engines (and arrived late at a dinner in our honor, still in our work clothes!)

(Continued on Page 3)

RESULTS OF 1969 RULES BALLOT

%	YES	NO	%	
95	394	19		1. The figure for "rear track" dimension should be either corrected or omitted.
	120	284	70	2. Any Type 1 front suspension may be used.
	101	308	73	3. Disc brakes may be used on front wheels.
85	351	63		4. Volkswagen parts may be modified within the limits of the manufacturer's specifications, or to dimensions specified in these rules.
95	394	23		5. Actual gear ratios for all legal "standard Volkswagen gear sets" should be included in the rules.
	175	219	56	6. Nerf bars shall be installed in front of the rear wheels.
69	278	124		7. Oil catch tanks shall be incorporated in the breather system for the engine.
	174	234	57	8. Only SCCA-approved fuel-cell tanks shall be used.
91	371	35		9. Roll bar specifications should be upgraded, and be more rigidly enforced.
53	213	192		10. Air ducting may be attached directly to engine components.
52	209	198		11. Minimum weight should be: "Without driver or fuel, 800 lb; with driver and fuel remaining at termination of a race, 1000 lb."
	200	208	51	12. Any standard VW 15-inch wheel may be used (15x4 or 15x4½, inc. slatted 1300)
	116	295	72	13. Any standard VW wheel may be used. (Includes 14x5½ transporter wheel.)
	32	376	92	14. Any wheel may be used.
	199	209	51	15. Any type of oil pickup may be installed in the crankcase.
55	225	186		16. Each pair of presently legal exhaust pipes may terminate in a single megaphone.
	149	261	64	17. Any exhaust system may be used.
71	292	117		18. Transporter clutch may be used.
	86	325	79	19. Fan may be altered or modified.
56	224	180		20. Coil springs encircling tubular shacks shall provide the <u>only</u> springing medium.
75	306	104		21. "Camber control devices" may supplement the coil springs, provided the coil springs alone are capable of supporting the entire weight.
	36	372	91	22. Any type of rear suspension may be used.
	140	266	66	23. Only tires advertised and recommended by the manufacturer for high-speed highway use may be used.
54	217	187		24. Approved tires may be recapped with any type of rubber compound.
81	325	74		25. The engine shall be mounted in front of the rear axle.
87	356	55		26. Reverse gear shall be normally operable.
85	352	64		27. The generator shall function "normally," as indicated by idiot light or ammeter.
	168	236	59	28. A "claiming price" should be established for Vee engines.
	132	268	67	29. A "claiming price" should be established for Vee cars.
	129	283	69	30. An auxiliary oil sump may be attached to the bottom of the crankcase.
63	262	153		31. Rear shack mounts may be altered or entirely removed.
62	247	153		32. The body rule should be changed to prevent further excursions into radically different design and construction, but should accept all present cars which conform to the 1968 rules as legal in the future.
93	376	38		33. Dimensions for the cam should be included in the rules.
67	274	135		34. Formula Vee should continue basically as it is, indefinitely.
	99	301	75	35. Formula Vee rules should be changed gradually to conform with European rules.
	195	204	52	36. Formula Vee should be updated periodically to reflect current Volkswagen production advances.
	109	294	73	37. An <u>additional</u> Vee class, using the 1500cc engine but based on the present rules, should be established.
	135	267	66	38. An <u>additional</u> Vee class, using the 1500cc engine and permitting more extensive modification, should be established.

THE BILL SCOTT INVASION (Continued from Page 1)

The qualifying runs were made on Saturday, and Bill ended up in 14th spot on the grid! The new engine would start to miss at about 4500 rpm, and wouldn't go over 5000, even in third gear. It wasn't missing badly, really—it was more as if it had a governor on it.

We decided it couldn't be anything wrong with the basic engine itself (partly perhaps because you don't change engines in a Zink between heats), so we started changing the other components back from the first engine—carb, plus, wiring, distributor, even the fuel pump. There was no opportunity to tell for certain whether or not we had cured the trouble, but it seemed to run better in the garage after we had changed the coil. This was confirmed when Capt. Roy Bates (of whom more later) stopped in to see how things were going. Had we, he asked, checked the voltage of the coil we were using? We hadn't. The one presently on the engine was OK—6 volts—but the one taken off—the one used for qualifying—was a 12 volt one! Apparently this is not an entirely new problem in Europe, where both are used. It was surprising, actually, that it had performed as well as it did—not a hint of trouble until about 4500 rpm.

It seemed obvious that we'd found the trouble, but there's nothing like knowing for sure. At the banquet to which we were invited that night, I missed Joe for a couple of hours. It turned out that he hadn't been frivolously wasting his time in small talk—he'd been busy cooking up a couple of deals. He had persuaded the representative of Bilstein shock absorbers (whose product was on Bill's car) that he would like to evaluate the shocks for himself. Then, he had arranged for the shock absorber company to rent the track for an hour, early the next morning, and had located the farmhouse where Bill was lodged and obtained his permission to try out the car—and the shocks. The shocks worked fine—and so did the engine.

The grid positions were posted Saturday evening, so Bill went to the drivers of the cars gridded ahead of him, most of whom knew that he was faster and would want to get through as soon as possible, and agreed with them on the pattern everyone would follow at the start. On the sixty-five-foot start-finish section a 4-3-4 grid was possible, with plenty of room between cars, so even in 14th place he had only three rows of cars ahead of him.

In the race Sunday, most of the actual excitement was during the first four laps, in which Bill moved up from 14th to first place! From the pits we couldn't see much real action (Joe translated the announcements on the PA system when we could hear them, so we know pretty well what was going on, but we had a perfect place for timing. The pits face on the broad start-finish section, where the cars have just come out of a corner and are still in third gear, but behind the pits—separated from them by only a three-foot walkway and a cyclone fence—is the back stretch, where the cars pass by flat out. Then a medium left, a right hairpin and a more gradual right, and they come by headed the other way, across the finish line. It's easy, then, to get the time lag between one car and another on the back stretch and get it on the board in time for the driver to catch it as he passes in front of the pits.

Bill was in front, of course, from the 5th lap on, so it was just a matter of adding a second and a half a lap to his lead on the next

two cars, which were fighting for second place. And sweating out the fear that something would happen to spoil it! We tried to get Bill to cool it a bit after he had built up a safe lead, but he explained afterward that he wanted plenty of margin in case he had trouble! It started to rain again soon after the race started, but while it slowed everyone down—slightly—it didn't change that second-and-a-half-a-lap one bit. We quit timing the last couple of laps because Bill was coming down the front stretch so far ahead of the two cars on the back stretch that we couldn't get the time to him. His official lead at the finish was 18 seconds, in a 55-minute race. Werner Reidl and Gunther Huber crossed the line four-tenths of a second apart, and the third Austrian car, driven by Helmut Marko, arrived 4.4 seconds later.

I don't know what they do when Moss or Surtees or Stewart wins a race there, but they mobbed Bill! People shaking his hand, or just trying to touch him through the press of people, girls kissing him, youngsters—and adults, too—wanting his autograph, flashbulbs popping—you'd have thought he was a native son! It was pure spectacle! It seems Bill had done more than just win a race—he had proved to all of Europe that “those Austrians” were *not* invincible! For a couple of years they have been taking the first three places so consistently that the rest of the drivers had resigned themselves to fighting for fourth. Bill's win, somehow, seemed to give them a new outlook, like maybe they could believe everything they've been saying about Formula Vee, after all!

Now for the lecture: How did he do it? How could a driver on a strange circuit (he was fastest qualifier in August on the North course, after about ten laps of practice, and had had about the same amount this time on the South course) beat drivers who had raced on it many times before? Was it the Zink car he was driving? Perhaps—but there was no such demonstration of superiority at Freeport last December when Zinks met many of these same cars. Was it his borrowed Mahag engine? Maybe—but third-place Gunther Huber turned the fastest single lap in the race, and the second and third place cars were soon to gain some on the long straights. What else, then? Well, in my opinion, Bill showed again that it's what's up front that counts.

On Saturday morning, as a preliminary to the opening of the weekend's festivities, a number of officials, celebrities and others (including your Director) paraded the entire circuit in a fleet of '69 Volkswagens which just happened to be there. Bill drove the Beetle in which I rode, and made a memorable experience of it.

He explained, while we were waiting for the line to start moving, that ever since he was about eight years old, his burning ambition has been to drive the Nurburgring. All his life he has not only read, but also *studied* every bit of literature he could find on the subject. Before he ever saw it, he said, he knew every curve and every bump by heart. And he proved it as soon as we started.

The pace wasn't fast, but it was brisk enough so that with some imagination and Bill's commentary we could visualize an actual race taking place. Throughout the course he followed his racing line, shifting at each shift point, braking for the corners, and describing not only each function, but the reason for it. It went something like this:

“The next corner is the Himmelhorn. It's

where Moss passed Nuvolari in the Grand Prix in 1937. We stay to the outside till we get to a little bush, then cut to the inside to cut the apex by a little white stone, and then drift out again. We stay in third because this next corner is sharper than it looks. We brake at a little tree and move to the center a little because there's a bump on the edge. That's where we start the turn. There's a bare spot on the apex where everyone drops a wheel. (Jackie Stewart spun out there in 1952—went in the brush and broke his arm.)

The next corner is the Hokenbrau. There's a reverse camber coming out, so we stay to the inside. At the top of this hill we start the turn early and straighten out for a moment because there's a hump where you almost lift off the pavement...,” and so on for seventeen miles, through 176 curves! All this *before* we get there, you understand—he's telling us what's coming up—not where we've been, or even where we are! And in my book, his line through every corner was perfect! You could feel it, even in the V.W. If a sharp left followed a sharp right, he made the first one so that he was ready for the next. He used all the available road in order to make his turns as wide as possible. He had his braking points, shifting points, turning points, apexes (apices?) all memorized. Bill Scott's only secret then was pure consistent flawless driving! On a course he knew by heart, foot by foot, even though he'd driven it only a few times before. I guess you know that Bill Scott is on my list of Great Drivers!

There were a couple of other cars shown on “USA” entries, too, even though their owners had European addresses. The McNamaras had one of their beautiful cars (driven by Peter Arundel, of Great Britain) and brought along what must have been the most complete racing equipment in the place. They had tools, a work bench, electric heater and hot plate (hot coffee any time!), chairs, you name it. What they didn't have in the garage they had in their stateside pickup camper, which in itself was the object of much attention. It was well that they came prepared—at tech inspection one inspector refused to approve the mount for their trailing arms, which was a sort of box, fabricated of sheet steels and welded to the bearing housing. Turned down on an appeal, they spent the night making new ones (using material liberated from a sheet metal sign) which were properly bolted to new axle housings by the next morning. They finished in seventh place.

Close behind, in ninth place, was Air Force Captain Roy Bates, who is stationed in Holland. Never having raced before, he bought a Belgian “Apal” kit last April, put it together, prepared his own engine and started racing. By July he was attracting some attention as an upcoming driver, and here at the Nurburgring he finished ninth, in a field of 38 top European drivers. Not bad for a rookie!

MEMBERS' SOAPBOX

Comment on an unsigned ballot: “Who counts these ballots? How do we know that the count you show is correct?”

I'm glad you asked that! My wife and I spent several days of my “vacation” counting those 15,471 check marks. If there is any doubt, you might ask SCCA for a recount—the ballots have all been sent to them, just in case they might have had similar feelings. don)

ON FITTING BEARINGS & STUFF

Probably not many of us will go to the lengths Ed Zink described for fitting con-rod bearings. Most of us will continue to follow the time-honored VW method of tapping the rod lightly until eventually the rod will fall to a vertical position of its own weight. This method does work out pretty well, obviously, but there's more to that tapping bit than you might suppose. If you "tap" long enough, you'll eventually get lucky and hit the right spot, but thanks to George Sipes (who runs an independent VW-and Vee-shop in Portland, Oregon, called "Checkpoint Motors"-Adv.), you can now do your tapping scientifically.

Select a feeler gauge which will just fit into the crack between the side of the con-rod and the crank - about .008 to .010. Holding the feeler in place, rotate the rod around the crank and you'll no doubt find tight spots at the rod bolts. This is due to the cap not mating perfectly with the rod itself. It's easy, then to tell where to tap either the rod or the cap to bring them into line so that the side clearance will be equal all the way around. Simple! Thanks, George!

A few more comments on rod fitting: For one thing, use a plastic hammer or a block of wood—don't use a steel hammer directly on the rod. One or two little dents won't hurt anything, but a number of them in the same area can distort the rod. Hammering along the ribs of the cap, for instance, will tend to straighten the cap so that it never will fit again. Torque the rod to only about 5 ft.-lb. before the tapping process so the halves will move easily, and complete the tightening after they are lined up. If there are burrs on the mating faces, due to previous use of a hammer at the joint, file them off; but be careful not to remove any metal from the face itself. You can check for distortion by laying a piece of very fine abrasive cloth on a perfectly flat surface, like a piece of glass, and rubbing the mating faces of the rod and cap on it. They should show a "polish" over the entire area.

When assembling the bearing inserts in the rods, put a little STP, or even plain oil, between the insert and the rod. Then if the inserts are cocked slightly they'll slip into proper alignment easily, without distortion.

Check the rods for straightness before installing them. Your VW dealer probably has a fixture which will not only show bent rods, but provides means for straightening them. If you don't have access to one, you can slip two or three rods, side by side, onto a single wrist pin and compare them. You can't be certain that they are all straight, but you can easily tell if one is less straight than the others. Probably by now nearly all engines are equipped with the rods which have a slight (1mm) offset, so have all the rods facing so that the little raised projection on the rod (about in the middle, on the side of the "I-beam") is on the same side. This projection, by the way, should be on the top side of the rod when it is installed in the engine.

If you find a bent rod, clamp the big end in a vise, between soft jaws or a couple of pieces of board, and use a rod stuck through the wrist pin as a lever for straightening it. Rods are amazingly soft and bend easily, like when you hammer the wrist pins out of the pistons at disassembly.

Grind a special punch, or use a tough screwdriver, to "stake" the con-rod bolts. The bolts will very likely reseal very close to their previous position, so to provide a fresh spot to stake, throw all the bolts in a pile on the table, stir them up and redistribute them. Or if you want to be scientific, just move the bolts from No. 1 rod to No. 2, etc.

VW shops have a special clamp for holding the crankshaft in a horizontal position for rod fitting. If you don't have one, just clamp the flywheel in a vise, attached to the crank in the usual way, with the throws horizontal

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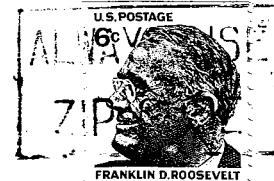
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FOR SALE: Beach Mk5B, one race on dyno-tuned engine. New paint, never wrecked. Two sets of tires—R-4's and Firestone Indys. \$1300. Gordon H. Ira, Jr., 451 St. James Bldg., Jacksonville, Fla. 32202 (904)356-2631.

FOR SALE: Reliable 1991cc TR-4. 4 firsts, 4 seconds, and \$350 support money from Triumph this year. With tow-bar and spares, \$1200 or best offer—or might trade for a Vee of equal value. Eric Greenwell, 1101 Gribble St., Richland, Wash. 99352 (509)943-9065.

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