

VIRGINIA MOTOR SPORT CLUB, INC.
P. O. BOX 25822
RICHMOND, VIRGINIA 23260-5822

FIRST CLASS

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CHECKPOINTS is the monthly publication of the Virginia Motor Sport Club, Inc. It is mailed free to members. Subscriptions to non-dues paying parties are \$6.00 per year. Deadline for contributions to the editors is Saturday following the last Thursday of each month. Advertising rates are: \$8.00 per ½ page per month; \$45.00 per ½ page per six months; and \$80.00 per ½ page per year.

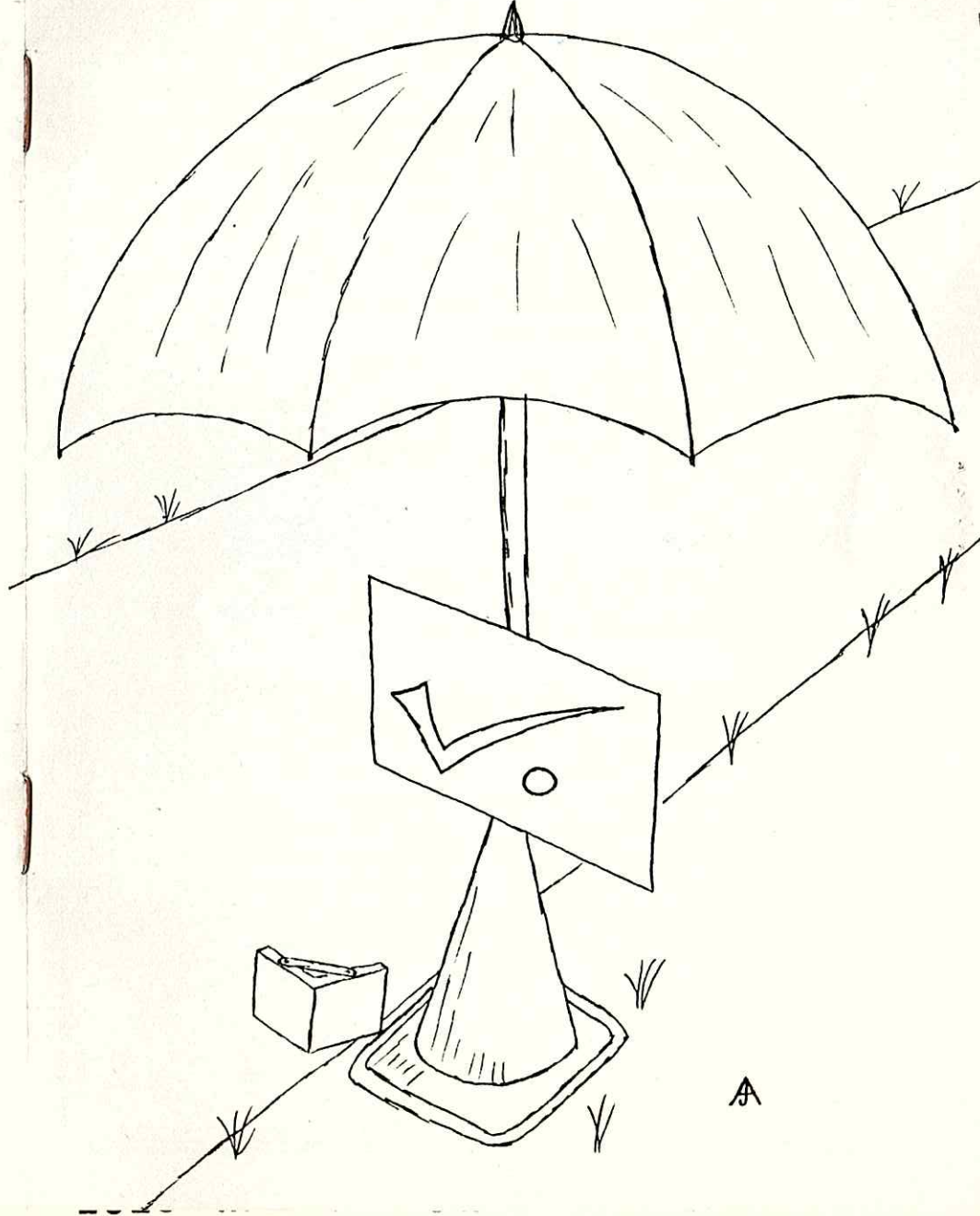
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Checkpoints

VIRGINIA MOTOR SPORT CLUB

VOLUME 26 NUMBER 9 SEPTEMBER 1981



A

What are you driving NOW?

Is your car....

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 superb on the road? (front-wheel drive, disc brakes, 5 speed transmission)
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VMSC POINTS FOR YEAR END TROPHIES STANDINGS AS OF 8-31-81

OVERALL			EQUIPPED		
1	G Stout	11900	1	D Jones	5600
2	W Greenwood	11800		G Stout	5600
3	S Powell	11450	3	N Dickinson	5500
4	B Hunter	10450		S Powell	5500
5	F Mills	10250	5	B Greenwood	5300
6	B Stout	10150		W Greenwood	5300
7	T Blot	9700	7	F DeBardeleben	5000
8	B Chvala	9450		M DeBardeleben	5000
9	Len Wells	9400	9	Len Wells	4600
10	S Hunter	9350	10	J DeBardeleben	4200
11	M Mills	8450		P Wilson	4200
12	A Armstrong	8350	12	T Blot	4000
13	D Jones	8050	13	B Armstrong	3900
14	L Parsley	7850		B Westbrook	3900
15	N Dickinson	7350	15	Chuck Hoelzel	3300
16	Libby Wells	7050		C Young	3300
17	B Armstrong	6950		L Young	3300
18	J Adcock	6500	<u>UNEQUIPPED</u>		
19	E Wimmer	6450	1	F Mills	5900
20	R West	6350	2	M Mills	5700
21	B Greenwood	6050	3	B Milligan	5500
	B Mills	6050		D Milligan	3500
23	G Eberhardt	6000	5	B Stout	5300
24	F DeBardeleben	5350	6	A Armstrong	4700
	D Milligan	5350		C Dabney	4700
26	B Milligan	5800	8	S Hunter	3900
27	B Parsley	5750		Libby Wells	3900
	P Wilson	5750	10	B Parsley	3750
29	C Young	5650		L Parsley	3750
30	L Young	5600	12	G Eberhard	3700
			13	B Chvala	3200
				J Chvala	3200
				B Mills	3200
<u>SPEED</u>			Keep in mind that the points shown above include all events up to 8-31-81. No "drops" have been taken.		
1	B Hunter	6900			
2	J Adcock	6100			
	W Greenwood	6100			
4	G Stout	5900			
	R West	5900			
6	S Powell	5500			
7	T Blot	5400			
8	S Hunter	5000			
9	B Chvala	4700			
10	E Wimmer	4600			
11	Len Wells	4500			
12	B Enos	4400			
	B Stout	4400			
14	F Mills	3900			
15	M Newsome	3800			

FOR QUALITY IN DOMESTIC AND FOREIGN CARS

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AT EASY TO AFFORD PRICES FROM THE MAN WHO CARES ABOUT CARS

ZAYRE AUTOCROSS REVISED



September 20, 1981

AT ZAYRE DEPARTMENT STORES

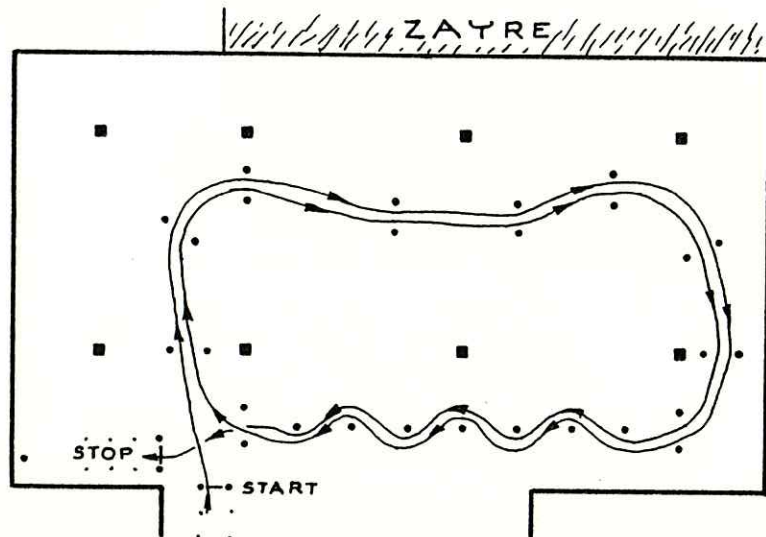
MECHANICSVILLE TPK.
RICHMOND, VIRGINIA

TEN CAR HEATS. \$6.00 FOR THREE RUNS.
(FUN RUNS \$1.00 EACH, TIME PERMITTING)

REGISTRATION AND TECH INSPECTION OPENS AT
11:00 AM EDT; FIRST HEAT RUNS AT 12:00 M.

MWCSCC CLASS SYSTEM AS MODIFIED BY VMSC, INCLUDING: SCCA APPROVED ROLL OVER PROTECTION FOR OPEN TOP CARS; CAMBER COMPENSATION ON SWING AXLE CARS; 1-3/4" MINIMUM GROUND CLEARANCE. EXHAUST SURPRESSION REQUIRED IN ALL CLASSES.

OFFICERS OF THE DAY: ALAN ARMSTRONG AND BARBARA STOUT
FOR MORE INFORMATION, CALL BARBARA AT: (804) 288-0174



CALENDAR of EVENTS

- Sep 17 VMSC monthly meeting at Our Lady of Lourdes School on Woodman Rd. 8:00 PM
- Sep 20 VMSC autocross by Alan Armstrong & Barbara Stout. See flyer in this issue.
- Sep 27 VMSC rally, "The Main Course," by Len Wells & Lewis Parsley. See flyer in this issue.
- Oct 11 VMSC autocross with fun runs first by Scott Powell & Dick Jones pending location of lot.
- Oct 15 VMSC monthly meeting at Our Lady of Lourdes School on Woodman Rd. 8:00 PM
- Oct 18 VMSC rally by Peter Wilson and John DeBardeleben
- Oct 30 VMSC Halloween party. See flyer-let in this issue.
- Nov 7 Scavenger Hunt by Scott Powell, details next month.

OFFICIAL RESULTS

RALLYMASTERS: FRED & MARIAN DEBARDELEBEN, WILT & BARBARA GREENWOOD
 OFFICIAL CHECKERS: BILL & JUDY CHVALA, LEN WELLS & TOM BLOT
 UNOFFICIAL CHECKERS: KATHI MC CALL** & BILL EDWARDS**
 WORKERS: DAVE & KATHI** MC CALL; ERICKA**, KRISTIN**, AMANDA**, JUDY & BILL CHVALA; RUTH & TOBY WILLIAMS; ALICE JONES; NANCY HOSKINS**; TRACY GREENWOOD; JENNY WHITE; RAY WOOD**;
 BETH MILLS; LINDSAY & ANNE** WILSON; CHUCK & ASHLEY** EDWARDS; KATHY** & WENDY**
 SINSABAUGH; LEN WELLS; TOM BLOT

O/A	CLASS	CAR #/MAKE	DRIVER/NAVIGATOR	✓	1/7	2/8	3/9	4/10	5/11	6/12	T	TOTAL
1	1E+	3 HONDA	G. STOUT D. JONES	AM PM	2 1	1 28	1 3	1 0	8 1	2 1	15 34	49
2	2E+	1 HONDA	P. WILSON J. DEBARDELEBEN	AM PM	24 0	2 4	1 2	200 0	4 1	3 2	234 9	243
3	1U+	7 HONDA	M. MILLS F. MILLS	AM PM	14 3	38 200	3 1	9 14	65 11	6 15	135 244	379
4	3E/PM	6 DATSUN	S. POWELL N. DICKINSON	AM PM	2 1	2 4	200 0	1 8	14 1	5 200	224 214	438
5	4E/AM	8 PORSCHE	G. WAGNER** R. WAGNER**	AM PM	0 0	0 7	2 200	0 200	4 4	0 200	6 611	617
6	5E	20 DATSUN	J. SEARS** J. FRIEDMAN**	AM PM	1 10	4 200	0 2	200 1	98 2	4 183	307 398	705
7	6E	16 DODGE	B. WESTBROOK B. ARMSTRONG	AM PM	200 7	199 61	200 2	6 4	8 5	3 200	616 279	895
8	2U+	19 TOYOTA	B. MILLIGAN D. MILLIGAN	AM PM	0 4	3 200	200 10	5 200	93 113	5 140	306 667	973
9	3U	13 MAZDA	A. ARMSTRONG C. DABNEY	AM PM	200 5	101 200	13 11	7 200	19 200	16 73	356 689	1045
10	4U	5 AUDI	S. HUNTER LIBBY WELLS	AM PM	19 49	99 200	63 27	101 200	200 39	21 200	503 715	1218
11	5U	21 MAZDA	B. JACKAMEIT** G. BELL**	AM PM	4 2	182 200	200 200	1 4	52 200	9 189	448 795	1243
12	6U	2 VOLVO	L. PARSLEY B. PARSLEY	AM PM	3 19	200 200	200 32	1 200	1 200	26 200	431 851	1282
13	7E	24 VW	C. HOELZEL E. TIDWELL**	AM PM	47 1	400 200	0 1	74 200	1 200	7 200	529 802	1331
14	7U	18 FORD	D. GUTRIDGE** J. GUTRIDGE**	AM PM	2 29	200 200	65 200	18 200	11 200	34 200	330 1029	1359

O/A	CLASS	CAR #/MAKE	DRIVER/NAVIGATOR	✓	1/7	2/8	3/9	4/10	5/11	6/12	T	TOTAL
15	8U	9 HONDA	G. EBERHARD B. HUNTER	AM PM	115 17	162 200	44 200	16 200	14 200	56 200	407 1017	1424
16	9U	4 HONDA	B. STOUT B. PHILLIPS	AM PM	14 200	200 200	45 27	200 61	200 200	79 24	738 712	1450
17	1R+	15 TRANS AM	F. MERKEL** R. KORIS**	AM PM	200 400	136 0	200 200	200 200	20 88	29 8	785 896	1681
18	2R+	14 TOYOTA	H. REGISTER** S. REGISTER**	AM PM	200 4	84 200	200 200	200 200	200 186	21 40	905 830	1735
19	3R	17 TOYOTA	A. REIMANN** C. SAUNDERS**	AM PM	200 127	22 95	200 192	200 200	200 200	200 94	1022 908	1930
20	10U	11 CORVAIR	C. YOUNG L. YOUNG	AM PM	200 200	200 200	68 200	180 39	183 200	154 137	985 976	1976
21	4R	27 HONDA	D. BEAUCHAMP** B. HELMS**	AM PM	200 200	400 200	0 200	200 200	200 200	17 175	1017 1175	2192
22	5R	25 CORVAIR	G. SPILLER** K. ABSE**	AM PM	200 200	195 400	200 0	200 400	200 400	69 0	1064 1400	2464
23	6R	28 SPITFIRE	L. COLLINS** B. TAYLOR**	AM PM	200 150	400 400	400 0	400 400	400 0	400 66	2200 1016	3216
24	7R	12 CORVAIR	D. BURTON J. RICKMAN**	AM PM	133 400	168 400	200 400	200 400	400 400	400 400	1501 2400	3901
25	8R	25 DATSUN	M. CHABOT** D. CAMPBELL**	AM PM	200 200	163 200	200 200	200 200	200 200	200 200	1163 DNF	DNF

PAUSE CLAIMS. CAR #4 REQUESTED A PAUSE CLAIM OF 4 MINUTES ON LEG 2. CAUSE: FLAT TIRE. CLAIM DENIED.
 CAR #24 REQUESTED A PAUSE CLAIM OF 1 MINUTE ON LEG 5. CAUSE: DISABLED RALLY CAR BLOCKING ROAD. CLAIM VERIFIED BY CAR #12. CLAIM ALLOWED.
 CAR #21 REQUESTED A PAUSE CLAIM OF 2 MINUTES ON LEG 7. CAUSE: FARMER BLOCKING ROAD. CLAIM VERIFIED BY CAR #20. CLAIM ALLOWED.
 CAR #20 REQUESTED A PAUSE CLAIM OF 3 MINUTES ON LEG 7. CAUSE: FARMER BLOCKING ROAD. CLAIM VERIFIED BY CAR #21. CLAIM ALLOWED.

PROTEST. A PROTEST WAS FILED BY CAR #2 ON LEG 12, DEALING WITH THE 668 ROAD CONFIGURATION. THE PROTEST STATED THAT THE POINT IN QUESTION WAS AN INTERSECTION, ALLOWING THE CONTESTANTS TO EXECUTE SI #15 RATHER THAN SI #16. THE RALLYMASTERS DECLINED TO DISCARD THE LEG ADMINISTRATIVELY AND SENT THE PROTEST TO COMMITTEE. THE CONTEST BOARD DENIED THE PROTEST.

LEGEND. ** NON-VMSC MEMBER /AM BEST AM SCORE NOT-OTHERWISE-PLACED
 + TROPHY IN CLASS /PM BEST PM SCORE NOT-OTHERWISE-PLACED

BEST AM (NOP) AND BEST PM (NOP) WILL RECEIVE TROPHIES

Alan,
 Someone has to be first and I wanted to be - so, using co-editorial
 privilege, here is the first use of the U.R.R. (an informal primer on its use)

THE UNIVERSAL RALLY REPORT

It's not hard enough to do Checkpoints in itself; the editors always must scrounge around and suck somebody into doing a rally report, too. The guy that ends up doing it wishes you had picked somebody else, the O.D.'s wish you had picked somebody else, you wish you had picked somebody else. It's a no win situation, except for Speedy Printing and the Post Office. But, we've fixed all that with Our Universal Rally Report below. Just fill in the blanks, circle the appropriate bracketed choices, and...Wham! Instant Rally Article. Nothing could be simpler.

~~Districtly Digits Snoopty II~~
 DETENTE

It was $\left\{ \begin{array}{l} \text{a bright, sunny day} \\ \text{a dark, rainy day} \\ \text{half past registration} \\ \text{Tuesday after the rally} \end{array} \right\}$ as I awoke $\left\{ \begin{array}{l} \text{confident in my knowledge of the generals for} \\ \text{with fear and trepidation of} \\ \text{terribly hung over for} \\ \text{fortunately too ill to run} \end{array} \right\}$

~~Green Road~~
 Name of Rallymasters Reinhold's Name of Rally Detente. After $\left\{ \begin{array}{l} \text{eating a light breakfast} \\ \text{convulsing uncontrollably} \\ \text{wetting my pants} \\ \text{having my stomach pumped} \end{array} \right\}$

I felt $\left\{ \begin{array}{l} \text{ready to knock down another lot overall} \\ \text{like I had been run over by a truck} \\ \text{like I had my shorts on backwards} \\ \text{for my left arm and discovered it missing} \end{array} \right\}$ $\left\{ \begin{array}{l} \text{Nevertheless} \\ \text{So} \\ \text{Eventually} \\ \text{Somehow} \end{array} \right\}$, I made it to the start, paid the

$\left\{ \begin{array}{l} \text{\$6.00 entry fee} \\ \text{\$10.00 entry fee} \\ \text{gross receipts from Star Wars} \\ \text{cop off} \end{array} \right\}$, waited for $\left\{ \begin{array}{l} \text{our out time} \\ \text{the seizures to subside} \\ \text{the car to catch fire} \\ \text{him to bring me my change} \end{array} \right\}$

and $\left\{ \begin{array}{l} \text{glanced through the generals one more time} \\ \text{listened to all the latest Atari scores} \\ \text{let the air out of ~~the~~'s tires} \\ \text{tried to find my medic alert bracelet} \end{array} \right\}$ \leftarrow (better not say)

All our time preparing for the rally $\left\{ \begin{array}{l} \text{started to pay off} \\ \text{left us with no time to buy gas} \\ \text{was wasted} \end{array} \right\}$

as we $\left\{ \begin{array}{l} \text{dragged down a zero} \\ \text{took a max} \\ \text{watched the car catch fire} \end{array} \right\}$ on Leg 1. The NRC trap on Leg 2 $\left\{ \begin{array}{l} \text{was no problem, either} \\ \text{gave us another 200} \\ \text{caused us to miss it} \\ \text{did not occur} \end{array} \right\}$

and we $\left\{ \begin{array}{l} \text{psyched out} \\ \text{felt stupid for buying} \\ \text{still don't understand} \\ \text{why not.} \end{array} \right\}$ The overlap trap on Leg A $\left\{ \begin{array}{l} \text{Much to our surprise} \\ \text{As usual} \\ \text{After Scott & Neale screwed us up} \end{array} \right\}$
 the last A get us through.

we $\left\{ \begin{array}{l} \text{sniffed out} \\ \text{bit} \\ \text{got sucked in by both of} \end{array} \right\}$ the lunch break trap(s),

even though $\left\{ \begin{array}{l} \text{it was cleverly disguised by the competent Rallymasters} \\ \text{we used it on our rally last month} \\ \text{we wondered why they had defined "hamburger" as a "turn to the right"} \end{array} \right\}$

We were pleased, though, because $\left\{ \begin{array}{l} \text{we only had a total of two for the morning} \\ \text{it gave us a chance to let the air out of ~~the~~'s tires} \\ \text{we could borrow a fire extinguisher} \\ \text{everybody at the real lunch break got ptomaine} \end{array} \right\}$ (either)

The afternoon $\left\{ \begin{array}{l} \text{was better than the morning} \\ \text{was the same as the morning} \\ \text{was worse than the morning} \\ \text{no opinion} \end{array} \right\}$. Imagine my shock when I looked over as

we crested that hill on Route 642 and $\left\{ \begin{array}{l} \text{--saw another checkpoint} \\ \text{--screamed those two kids} \\ \text{--went through radar at 92} \\ \text{--saw I was alone in the car} \end{array} \right\}$. Thank God it was

administratively discarded. I knew we were in trouble on the DIT leg

when $\left\{ \begin{array}{l} \text{our instructions blew out the window} \\ \text{my calculator batteries leaked in my lap} \\ \text{this town in the distance turned out to be Boise} \end{array} \right\}$, but we $\left\{ \begin{array}{l} \text{guessed the correct OET} \\ \text{didn't have a prayer anyway} \\ \text{hit that telephone pole} \end{array} \right\}$

so it didn't matter.

We $\left\{ \begin{array}{l} \text{really enjoyed the rally} \\ \text{should have stayed in bed} \\ \text{thought the whole event was in bad taste} \end{array} \right\}$. The O.D.'s should $\left\{ \begin{array}{l} \text{have lowered the speeds} \\ \text{have raised the speeds} \\ \text{try to put on a real rally} \\ \text{be lynched} \end{array} \right\}$

anyway, I $\left\{ \begin{array}{l} \text{look forward to their next effort} \\ \text{will sign up to work their next rally} \\ \text{would rather be autocrossing} \\ \text{hope no one from out of town lives to tell the truth} \end{array} \right\}$

(seriously, Detente was well planned and executed and, though our scores were terrible, we enjoyed most every minute) Chris
 for Lil and myself.

Problem of the Month Contest

The problem for this month consists of a series of road signs. These signs can be divided into three basic categories: Warning Signs, Regulatory Signs, and State Highway Route Markers. The object is to identify the meanings of the Warning and Regulatory signs, and to determine the state that uses the State Highway Route Markers. Some leeway will be allowed in the identifications of the signs, however, imprecise or vague identifications will be considered wrong.

Each of the signs is designated with a number. Please use these numbers with your identifications. Each correctly identified sign will be worth one point.

Send your solutions to one of the editors at the addresses shown on the back cover. (Note that one of the addresses is new.) Your solutions must reach the editors no later than Thursday, October 1, 1981. Be sure to include your name and address with your solution.



SOLUTION TO THE AUGUST PUZZLE

Last month's problems were billed as being difficult, however, four people sent me solutions very shortly after Checkpoints was sent out. Everyone correctly solved all the series except for H. I don't know if there is a possible solution for H, but I never found one. My typist (me) messed up the series when copying it, and I didn't catch the error. H should have been: 6, 6, 4, 8, 4, 12, 4, 16, —. If any of you are interested in trying it (for no points) I'll publish the solution next month. Now on to the others.

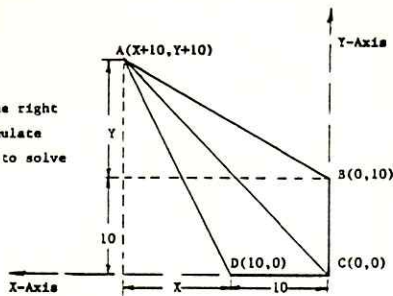
- A. This series was formed by squaring the elements of the series 2, 3, 4, 5, 6, and alternately adding and subtracting 1. The next element is 7 squared minus 1, or 48. Three other methods were used to get the same number, and since they are all logical, they are correct.
- B. Everyone agreed on this one. The series is formed by adding the three previous elements to get the next one. 15 plus 27 plus 50 is 92.
- C. This series is formed by alternately adding and dividing. The added numbers go 3, 4, 5, etc., and the dividing numbers go 2, 3, 4, etc. The next element of the series is 2 plus 6, or 8. Another solution to this series dealt with the numbers in pairs. A basic series of decreasing primes: 7, 5, 3, 2 were paired with the numbers formed by adding the series 3, 4, 5, 6 to the series of primes.
- D. Everyone agreed on this one also. The elements are formed by taking the sum of the digits of the sum of the preceding two elements. 9 plus 5 is 14, and 1 plus 4 is 5.
- E. This series was formed by alternately adding and subtracting prime numbers starting with 2. 3 plus 17 is 20.
- F. This series was formed by adding the sum of the digits of an element to that element to get the next element. 71 plus 7 plus 1 is 79.
- G. The elements of this series are formed by adding the previous two elements and adding 1. 17 plus 28 plus 1 is 46.

* * * * *

SPECIAL PROBLEM

Do you all remember the special problem whose solution was worth a six pack of beer? Well, no one gave me a correct solution. In fact I only know of two people who tried to find the solution. For those of you who are interested, one method of solving the problem appears on the next two pages.

There is a story behind the special problem, which will explain why the solution is presented in such a strange format. Several years ago a man wrote to Popular Science magazine and stated that he had come across the problem in Popular Science and had been trying to solve it for 37 years. Popular Science passed the problem on to their readers to see how many could solve it more quickly. I managed to solve the problem after about 8 hours of hard work, two dozen donuts, and who knows how many cups of coffee (I was sitting in a donut shop in Blacksburg). The following Monday I typed up the solution and sent a copy of it to Popular Science. I kept the original which was reduced to 50% to go in here.



The figure at the right was used to formulate the method used to solve the problem.

Given: Times to travel: A to B to C = 35 Minutes
 A to C = 30 Minutes
 A to D to C = 40 Minutes
 Speed: Constant Angles: $\angle BCB = 90^\circ$

Find: Speed

Basis of Computations:

The distance between two points on a plane using a rectangular co-ordinate system with axes labeled X and Y, is: $(\Delta X^2 + \Delta Y^2)^{1/2}$ or $((X_2 - X_1)^2 + (Y_2 - Y_1)^2)^{1/2}$.

By placing the origin at C and arranging the Y-axis along BC, increasing toward B, and the X-axis along DC, increasing toward D, the co-ordinates of B, C, and D become known. The co-ordinates of A can be expressed in terms of the two unknowns X and Y (see drawing above). The lengths of lines AB, AC, and AD can be expressed in terms of the speed traveled.

By setting up the co-ordinate equations for the lengths of AB, AC, and AD (two unknowns) and equating them to the lengths of AB, AC, and AD in terms of speed (one unknown), three equations with three unknowns are developed. Simultaneous solution of the equations will give the speed; the co-ordinates of A, the lengths of AB, AC, and AD, and all angles of the figure can be found from the speed.

The following pages give the computations used and scaled drawings of the resulting figures. Lengths of AB, AC, and AD, and the angles are given without showing the method of computation.

Let R = The rate of speed in miles per minute

Then: AB = 35R-10
 AC = 30R
 AD = 40R-10

Using co-ordinate geometry to find the lengths of AB, AC, and AD:

$$\begin{aligned} (1) \quad AB^2 &= (35R-10)^2 = (X+10)^2 + (Y)^2 \\ (2) \quad AC^2 &= (30R)^2 = (X+10)^2 + (Y+10)^2 \\ (3) \quad AD^2 &= (40R-10)^2 = (X)^2 + (Y+10)^2 \end{aligned}$$

$$\begin{aligned} (2) - (1) &= (30R)^2 - (35R-10)^2 = (Y+10)^2 - (Y)^2 = 20Y+100 \\ (2) - (3) &= (30R)^2 - (40R-10)^2 = (X+10)^2 - (X)^2 = 20X+100 \end{aligned}$$

Let: P = (30R)² - (35R-10)² and Q = (30R)² - (40R-10)²
 Then: P = 20Y+100 and Q = 20X+100
 Solving for X and Y: Y = (P-100)/20 and X = (Q-100)/20

Substituting into equation (2)

$$\begin{aligned} (30R)^2 &= ((Q-100)/20 + 10)^2 + ((P-100)/20 + 10)^2 \\ (30R)^2 &= ((Q-100+200)/20)^2 + ((P-100+200)/20)^2 \\ (600R)^2 &= (Q+100)^2 + (P+100)^2 = Q^2 + 200Q + 10,000 + P^2 + 200P + 10,000 \\ (4) \quad (600R)^2 &= (Q^2 + P^2) + 200(P+Q) + 20,000 \end{aligned}$$

Next solve for (Q²+P²) and 200(P+Q) in terms of R.

$$\begin{aligned} P &= (30R)^2 - (35R-10)^2 = 900R^2 - (1225R^2 - 700R + 100) \\ P &= -325R^2 + 700R - 100 \\ Q &= (30R)^2 - (40R-10)^2 = 900R^2 - (1600R^2 - 800R + 100) \\ Q &= -700R^2 + 800R - 100 \end{aligned}$$

$$\begin{aligned} 200(P+Q) &= 200(-325R^2 + 700R - 100 - 700R^2 + 800R - 100) \\ (5) \quad 200(P+Q) &= -205,000R^2 + 300,000R - 40,000 \end{aligned}$$

$$\begin{aligned} P^2 &= (-325R^2 + 700R - 100)^2 \\ P^2 &= 105,625R^4 - 455,000R^3 + 555,000R^2 - 140,000R + 10,000 \end{aligned}$$

$$\begin{aligned} Q^2 &= (-700R^2 + 800R - 100)^2 \\ Q^2 &= 490,000R^4 - 1,120,000R^3 + 780,000R^2 - 160,000R + 10,000 \end{aligned}$$

$$(6) \quad P^2 + Q^2 = 595,625R^4 - 1,575,000R^3 + 1,335,000R^2 - 300,000R + 20,000$$

Substitute Equations (5) and (6) into Equation (4).

$$\begin{aligned} (600R)^2 &= 595,625R^4 - 1,575,000R^3 + 1,335,000R^2 - 300,000R + 20,000 \\ &\quad - 205,000R^2 + 300,000R - 40,000 + 20,000 \end{aligned}$$

$$(600R)^2 = 595,625R^4 - 1,575,000R^3 + 1,130,000R^2$$

Divide through by R²:

$$(600)^2 = 595,625R^2 - 1,575,000R + 1,130,000$$

$$0 = 595,625R^2 - 1,575,000R + 770,000$$

Divide through by 625

$$0 = 953R^2 - 2,520R + 1,232$$

Solving for R:

$$R = \frac{2,520 \pm \sqrt{((2,520)^2 - (4)(953)(1,232))}}{(2)(953)}$$

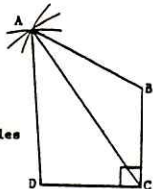
$$R = 1.997, 0.6474 \text{ Miles per minute} = 119.81, 38.843 \text{ Miles per hour}$$

As can be seen from the drawings below, the correct solution is:

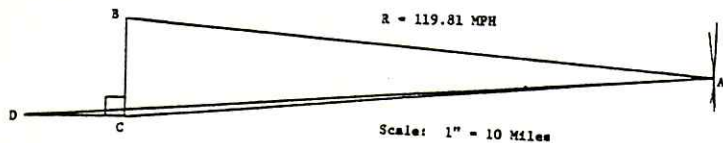
$$R = 38.843 \text{ Miles per hour}$$

Angles: $\angle DCA = 54^\circ 41' 11.0''$
 $\angle DAC = 30^\circ 53' 15.7''$
 $\angle ADC = 94^\circ 25' 33.3''$
 $\angle BCA = 35^\circ 18' 49.0''$
 $\angle BAC = 27^\circ 10' 16.7''$
 $\angle ABC = 117^\circ 30' 54.3''$
 Sum = $360^\circ 00' 00.0''$

R = 38.843 MPH
 Scale: 1" = 10 Miles



Lengths: AB = 12.65845 Miles
 AC = 19.42153 Miles
 AD = 15.89537 Miles



NOISE FROM THE ATTIC

First off, we must thank former editors Dick Jones and Gary Stout for the anniversary issue of Checkpoints that they produced for August. A reprise of their efforts appears with the URR in this issue.

Larry Ellis, who has accepted a good-paying job in Kansas City, will be replaced in VMSC by another Alfa Romeo owner, George England, who owns a 1971 Spyder and enjoys rallying. Mark Johnson joins us this month to rally and autocross with his 1970 Saab 96. This month's other new members, Rob and Betsy Moore plan to autocross their 1979 Saab Turbo or their 1980 Datsun 310GX. Welcome to the fold!

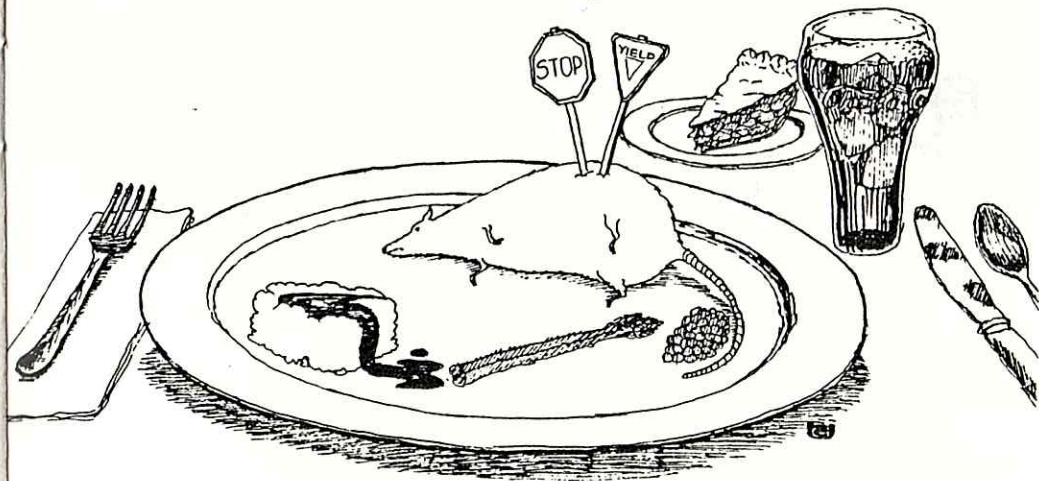
The much heralded VMSC Bowling Team has begun its season with a couple of wins by this year's line-up of Alan Armstrong, Emilie Sikora, and Chris and Lil Young. Come on Tuesday nights at 9 at Bowl America on Midlothian Tnpk, and cheer the team on!

Two new events will kick off the traditional Fall party season. Floyd and Beth plan an all for fun costume party for Halloween. All us children will have to get with the program and have a great time. Later on, in November, Scott Powell revives the Scavenger Hunt for VMSC. This (hopefully) automotive related event was always good for a great time.

We'll look out the dormer again later.

VMSC SAYS "EAT A WELL-BALANCED RALLY"
WITH

The Main Course



Menu

Possum à la Michelin X
Smashed Potatoes
Radial Asparagus Spareribs
Carsick-green Peas

Choka-cola or Tea
Rare Traps of Our Choice
Course Following Delite
Ample Humble Pie

THE MAIN COURSE: A sports car rally using a main road rule.

WHEN: September 27th, 1981. Registration will be from 11:00 A.M. until 11:45 A.M.. First Car Leaves the start at 12:01 P. M.

HOW MUCH: \$6.00 per car. The rally is about 120 miles long, with approx. 87 miles in the competitive portion.

WHERE: Start and finish at the Staples Mill Shopping Center at the intersection of Staples Mill Road (Route 33, West) and Glenside Drive. The finish will be at the Greek Circus.

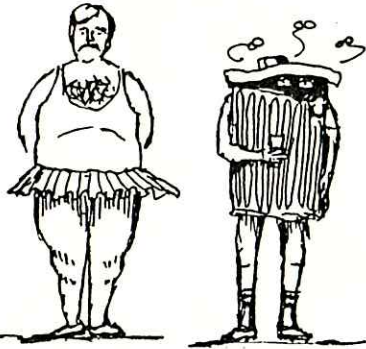
CLASSES: Regular VMSC classes - Equipped; Unequipped; & Rookie.

RALLYMASTERS: Len Wells (804) 275-8772 - Lewis Parsley (804)262-1350.

THE MILLS HOPE TO PRESENT:

VMSC'S
FIRST EVER
HALLOWEEN

COSTUME PARTY



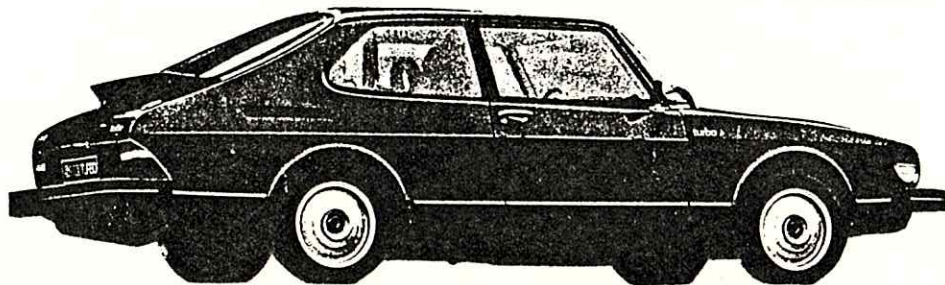
FRIDAY, OCTOBER 30TH

8:00 P.M. BYOB
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MUST BE IN COSTUME!

THIS IS YOUR CHANCE TO BECOME THE PERSON OR THING YOU'VE ALWAYS WANTED TO BE! IF YOU'RE STUCK FOR IDEAS, HERE ARE A FEW OF OURS — A CANCELLED CHECK, A ROLL OF SARAN WRAP, TARA, A FIVE DAY DEODORANT PAD, A BACK-HOE, A SCRUBBING BUBBLE, MR. POTATOE HEAD, A HOT AIR BALLOON, MANY MORE! HOUSEHOLD ITEMS SUCH AS, DUST, BREADCRUMBS...

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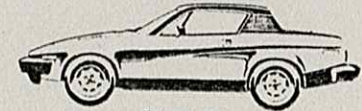
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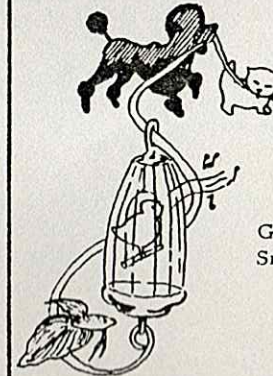
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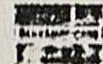
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320-8210

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PLEASE MAKE ALL CHANGES AND
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THE EDITORS OF CHECKPOINTS,
CHRIS YOUNG AND ALAN ARMSTRONG.
THANK YOU.