

CORVETTE NEWS

VOL. 5
NO. 3

FOR CORVETTE ENTHUSIASTS





CORVETTE NEWS



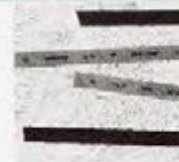
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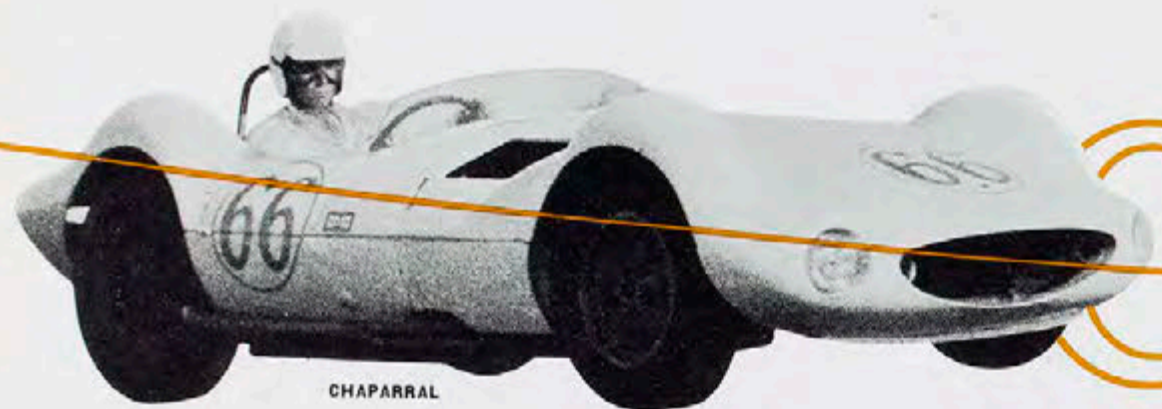


COVER

The '62 Corvette proves an object of fascination for young bandmen at the St. Paul Winter Carnival Torchlight Parade. Photo by Don Sudnik, General Motors Photographic.



TRACKDOM'S SLEEKEST IRON POWERED BY



CHAPARRAL

EDITOR'S NOTE: With a background of M.I.T. mechanical engineering and Pratt Institute industrial design, Karl Ludvigsen started out in 1956 as a Junior Designer in the research studio of General Motors Styling Staff. His path soon led him to the position of Technical Editor on *Sports Cars Illustrated* (now *Car and Driver*), of which he became editor in 1959. In 1961, he joined the Public Relations Staff of General Motors where he can be found today. Noted for his books and numerous articles in sports car magazines, Karl is a member of the SCCA, SAE and the St. Anthony Club of New York. He's a young man with irrepressible enthusiasm who simply enjoys driving and writing about good cars.

The automotive debut of Chevrolet's V8 engine was met with raised eyebrows by members of the high-performance fraternity. It was viewed as a fine passenger car engine, but doubts as to its potential as a competition power plant were plentiful. That was in late 1954, when the "power pack" version was capable of developing 180 horsepower. Today, the Fuel Injection Corvette V8 develops no less than twice that power. And it's a pretty sure bet that there are close to 100 special road-racing sports cars that count on Corvette engines for "go."



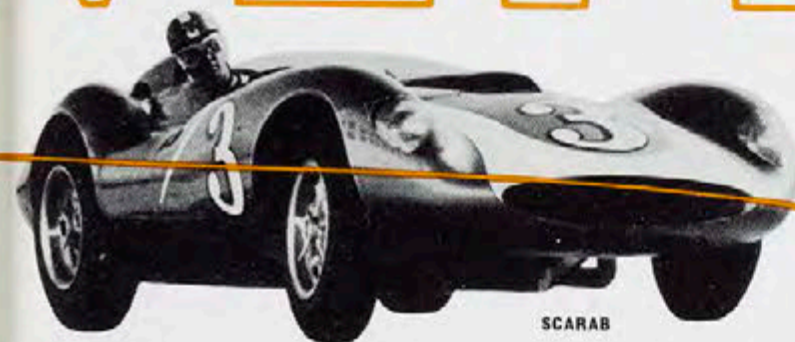
LISTER-CORVETTE

Such complete acceptance has been accorded no other American power plant in history. This is the story of how it all came about.

The Motorama on January 11, 1956, heralded the arrival of a greatly improved Corvette sporting the V8 engine. This Corvette had the first of the famed dual-quad carburetor layouts and offered a new close-ratio manual gearbox. What could it do on the track? Ask anyone who watched Zora Arkus-Duntov and John Fitch challenge the field in their pioneer entries at Daytona and the Sebring 12-Hour Race. Corvette made the most of both opportunities to prove that it could now be considered the "Real McCoy."

And, as might well be expected, these efforts weren't lost on the upperclassmen of speed. Vic Edelbrock had been working on a three-carb manifold for the new V8 since mid-'55. Independent dynamometer tests had shown that the 265-cubic-inch engine could deliver over 225 horsepower and rev to high engine speeds with the best of them. In addition, its low weight and small overall dimensions were attractions that couldn't be ignored by the sports-racing car builders.

Enthusiast Tom Carstens had always favored American engines for his immaculately prepared sports cars, and when the new Chevy bent-eight caught his eye, Edelbrock got the call. The assignment was a 1955 block which was to receive a full-race cam, 10.5:1 compression ratio and 305 cubic inch displacement. The finished product was installed in a British H.W.M. chassis, first used at Pebble



SCARAB

Beach in April, 1956. This was a big day for the Corvette 8, a day that set a Corvette-powered pace for special builders across the country.

Concurrently, big things were happening to Corvette engines in other parts of the country. Bob Gillespie was using Corvette power with the Edelbrock three-carb manifold in his A6GCS Maserati, and the tube-framed Eave Special was being constructed with the same manifold and power. Close association also developed between Bill Sadler and Corvette when, in late '56, he squeezed a Corvette engine into his compact special. The resulting "bomb" first hit the track at Watkins Glen.

Progress was in the offing and when the factory made the next move, the Corvette engine was given a permanent push in the right direction. Rochester Fuel Injection and a new 283-cubic-inch engine were made available for the Corvettes competing at Nassau in '56. Now Corvette would race with 283 horses under the hood. Work continued throughout the winter and, as the first spring buds began to show their heads, the space-framed SS Corvette appeared—ready and able to strut its stuff at



STING RAY

CORVETTE

BY KARL LUDVIGSEN

Sebring. Part of this project was the designing of a new, four-speed all-synchronized transmission which was made available on all Corvettes just two months later.

To the special builder, that transmission was the key. The Carstens car used a Jaguar box, Gillespie probably had retained the Maserati transmission, and Eave had to use a three-speed. None were satisfactory for racing behind the power and torque of the Corvette V8. With the new gears, over 300 horsepower could easily be obtained and used to the fullest. That's what the special bugs had been waiting for.

It's not at all surprising that Lance Reventlow, mulling over plans for his own sports-racing car, selected the Corvette engine and transmission as a nucleus. The Scarabs which he designed have been the most successful American speedsters since the white machines of Briggs Cunningham first began tearing up the tracks.

Work began on the first Scarab in September, 1957. Six months later it was making its shakedown runs. First 302 cubic inches, then 339. The engines utilized the Hilborn fuel injection system and special oversize valves (worth about ten dollars apiece). In tests, a high-rpm camshaft produced 390 horsepower



LION CAGE



DEVIN-CHEVY

at 7,000 rpm, but the torque wasn't adequate. A compromise cam was substituted that provided 375 bhp at 6,000 rpm with 370 pound-feet of torque at 4,500 rpm. The Scarabs had power to spare from 3,000 to 7,000 rpm.

Other hands were at work in the '57-'58 winter—this time up in northern Minnesota. Messrs. Staver, Larson and Grierson used Chevrolet brakes, suspension and frame rails for their first Devin-bodied Echidna special. The engine was a stock displacement Rochester Injection Corvette. The first Echidna raced at Milwaukee in May of 1958, and it was soon followed to the track by two sister Echidnas.

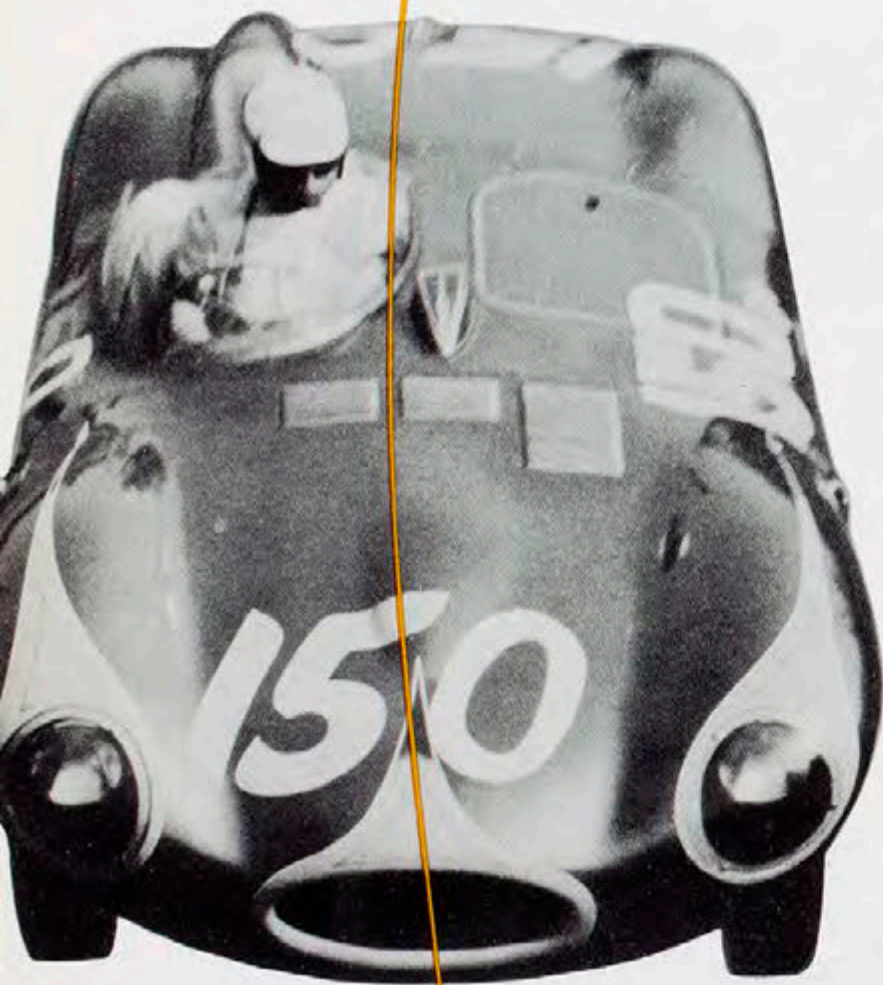
Special builders received further encouragement from Brian Lister's announcement that he was going to produce a sports-racing chassis specially for the Corvette engine. It was ready for the '58 season. Al Dean obtained one (via Carstens) for Bill Pollack to drive at Riverside. Bruce Crower built the engine, enlarging its measurements to 4.00 x 3.50 for a booming 351 cubic inches. Dragster-style stub exhausts jutted from both flanks of the low Lister-Corvette.

Other Listers were bought by Texans Carroll Shelby and Jim Hall, and by Mrs. Du Pont for her "Kelso" stable. The dull black finish of the latter car was frequently seen at Eastern tracks as it gradually evolved from a Lister-Corvette to a potent Kelso Special.

The success of the Echidnas spurred the arrival of other Devin-bodied specials during the '58 season. In just 30 days, Dick Morgensen united a six-carb Corvette engine to a solid-axle chassis for one of a series of Morgensen Specials. The disc-braked Knoop-Huffaker Special came out of the San Francisco Bay area, and the Mangham-Davis Special appeared in Texas. Al Miller used a Corvette engine in one of his many sports-racing cars, and John "Bat" Masterson used one in his Devin-bodied "Batmobile." Corvette power was pushing many cars to success . . . and the word was fast circulating.

Denver, Colorado, suddenly started to stir with the awakenings of a new enterprise . . . the Bocar Special. Bob Carnes' first tube-framed, fiber-glassed prototype was followed by the XP-5, XP-6, XP-7 Bocars, and more recently the Bocar Stiletto. All used virtually standard Corvette engines, although some were equipped with superchargers. On the national racing scene, the Bocars were achieving considerable fame in the hands of such well-known drivers as Harry Heuer, Augie Pabst, Paul O'Shea, Art Huttinger and Carnes himself.

Meanwhile, Bill Devin was getting understandably restless at sitting back and watching others set marks in his body shells. In mid-'58 he got in touch with a firm in Belfast, Ireland, that made a trim tubular competition chassis. By early '59, Devin had built the first Corvette-powered Devin SS. Since then he has made several of these rare and exciting cars, some of which are still available on special order.



D-JAG SPECIAL

Big things were also happening to the test or "mule" version of the Corvette SS. Bill Mitchell, Vice President in charge of GM Styling, designed and built a new body for the spare SS. The result was aptly named the "Sting Ray." It first saw action at Marlboro on April 18, 1959, and it has been a top contender ever since. It's powered by a virtually stock injection Corvette engine.

Throughout 1959 and '60, many more cars were equipped with Corvette engines. Doubts about its ability had long since vanished, and the new USAC road-racing championship encouraged the building of sports-racing speedsters. Several 500-S Kurtises were renovated with Corvette engines, the old Pickford Jaguar was reborn with 345 inches of V8 installed by Don Hulette, and even the original "Old Yaller" picked up a Corvette engine and was renamed the "Lion Cage." D-Jags aplenty with a C-Jag thrown in—all got the Corvette speed treatment.

The great Italian machines? Why not! At least two 300S Maseratis have been converted, and it's happened to Ferraris in droves.

A disc-braked Ferrari Monza . . . Bud Faust's Testa Rossa . . . a Mondial . . . and at least two of the big 419 Ferraris are now feeling the power behind Corvette.

And who could leave out the small-displacement cars such as Elva and OSCA. It's a tight squeeze (one Elva has been nicknamed the "Shoehorn Special"), but the appeal of Corvette power is pretty hard to resist. Aston-Martins and countless Austin-Healeys of all vintages have accepted V8 engines by Corvette.

The specials continue to flourish, too. The brutal-looking Rutherford Special appeared in the East . . . Jack Ensley's Lister-like SHE with a Corvette of 341 cubic inches came to life . . . and a Corvette-powered Campbell Special was designed



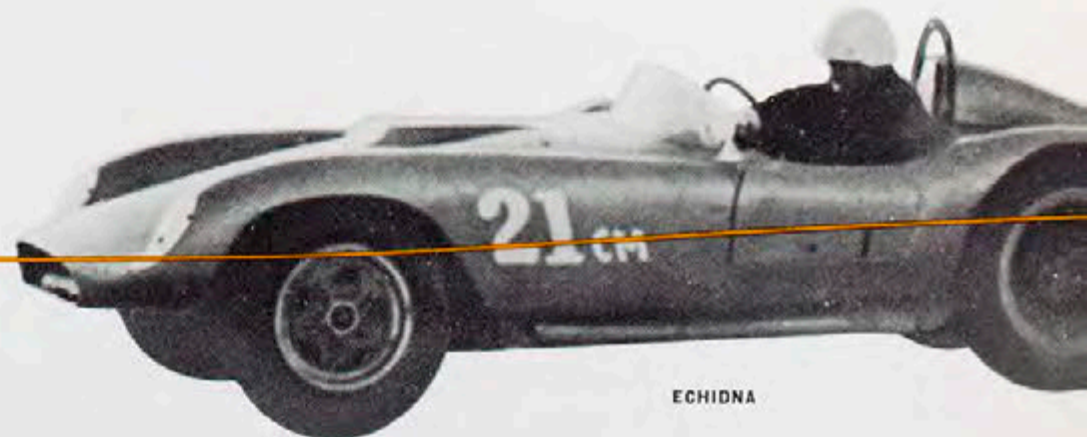
BOCAR



LISTER



BATMOBILE



ECHIDNA

with a rear engine. One of the finest in the world is the Chaparral. Built by Dick Troutman and Tom Barnes, driven by Jim Hall, these trim, ultralight cars use the V8 in sizes varying from 318 to 339 inches. If Hall's ambitious plans are realized, America may well be represented by Chaparrals in international competition in 1962.

The story ends almost where it begins . . . with a new "Corvette Special." Based on a chassis by Max Balchowsky and clothed in actual Corvette body panels, the Special has a striking resemblance to the real thing. So far, its driver says it doesn't handle as well as a stock Corvette—an appropriate tribute to the progress Chevrolet is making on its own with Corvette, while the rest of the sporting fraternity is busily making the conversion to power by Corvette.



BY DANNY COLLINS



EDITOR'S NOTE: Danny Collins is known to many *Corvette News* readers through his earlier article "Driving the Corvette in Competition" (Vol. 4, No. 4). Danny's premise in his present article: Corvettes have not had fair exposure in European Grand Touring races. Therefore he will drive a '62 Corvette in Europe in the GT Class. The Corvette is being purchased in this country by Roy Winkelmann, a dedicated sports car enthusiast and Danny's business associate. Roy's personal life reads like a travelogue. English-born, he came to this country, worked and lived in Denver, then in 1959, moved back to London to consolidate his business, Armoured Car, Ltd. Roy's enthusiasm and Danny's driving bode good tidings for Corvette in Europe!

Though Corvettes reign supreme in American production sports car racing, rarely have people across the Atlantic seen one on the streets, let alone on a race course. This situation will change during 1962, when Roy Winkelmann and I enter a carefully prepared '62 Corvette in Grand Touring Class, the rough equivalent of Production Sports Car Class in America. We're going to go all-out to make a good showing in Europe with our Corvette against GT Ferraris, Aston-Martins and others.

Corvette News readers may recall from my article "Driving the Corvette in Competition" that I hold (as the English would say) "rather strong views" about the good cornering qualities of a competition-prepared Corvette. I prefer the Corvette's handling qualities to several modified sports cars, including Ferraris, that I have driven in the past eight years. I wrote that article because I felt the prevalent attitude "Good handling qualities come only out of a car designed in Europe" was quite unfair to the Corvette. My racing experience in well-known modified sports cars put me in a favorable position to judge the Corvette's handling—and I thought I had better put the record straight. A year ago I stated that my '60 Corvette felt better than either my Mercedes-Benz Special or the Ferrari. The '62 feels even better yet.

Motoring is a top-notch sport in Europe and nearly every Saturday afternoon sports fans can and do watch motor racing on television. (Stirling Moss, for example, was voted "Sportsview Personality of the Year" by the British Broadcasting Company.) I'm sure that this high interest gave Roy Winkelmann added incentive for moving to London to consolidate a business venture. Stateside, Roy had been an active promoter of Rocky Mountain races in 1956 and SCCA National Races in

1959. I wasn't too surprised, therefore, when in February, 1961, Roy asked me to drive his Formula Junior Lotus 18 over in England—and to act as administrative officer in his fast-expanding business.

During the course of that 1961 racing season, both Roy and I noticed a great deal of interest among racing fans and competitors in the Grand Touring Class. The Modified Sports Class, recently the most popular, has fallen out of favor throughout Europe because the expense of developing and racing limits participation. The Grand Touring Class now shares the spotlight second only to Formula 1 Grand Prix cars. The FIA (Federation Internationale de l'Automobile) decided they would award World Constructors' Championships to makers of cars in the Grand Touring Class in 1962. This tidy bit of news, naturally enough, generated even more interest in the Grand Touring Class—both from drivers and spectators.

While drivers in Europe were discussing their chances in a Ferrari, Aston-Martin or Jaguar, we kept thinking back to the very happy 1960 season spent at the wheel of Dick Toops' Corvette. And we knew that most European enthusiasts had never seen a carefully prepared Corvette. (One of the main reasons, by the way, that few Corvettes are active in Europe is the cost. In England, for instance, import duty and purchase tax add 88% to the original price.) We realized if we brought a Corvette over, we would have a number of interesting problems. It would have to be carefully prepared to conform to very strict FIA regulations for GT cars. All entrants must carry a so-called "Recognition Form" with them to technical inspection. This "Recognition Form" certifies the car is a GT model as defined under FIA rules, which often take a French-speaking Philadelphia lawyer to interpret. In spite of these problems, we have decided to plunge in and try to make a bit of a splash on the European motor racing scene with a '62 Corvette.

Roy is now in the U.S. making arrangements to bring a Corvette, with adequate spares, into England. The car will be prepared on the West Coast by Bill Thomas. Then we'll bring it over to race on such famous English courses as Aintree, Oulton Park, Brands Hatch, Goodwood and in as many of the important races on the Continent as possible. We may make a few mistakes, but our past experience with Corvettes and Bill Thomas' careful preparation should go a long way toward showing European race fans that the Corvette can get in and mix it up with the very best cars money can buy.

TUNED AND READY TO TAKE THE CHECKERED FLAG

Part II of a
two-part article
on preparing
the Corvette
for competition.
By Bill Thomas

EDITOR'S NOTE: As a follow-up to Mr. Thomas' article on preparing the Corvette's chassis for competition ("How to Handle the 'Racing Bug' in a Corvette") which appeared in the *Corvette News* Vol. 5, No. 2, this current article presents his methods on Corvette engine tune-up. Naturally, the suggestions discussed are entirely those of Mr. Thomas, and publication in *Corvette News* does not in any way constitute an endorsement by the Chevrolet Motor Division. This article is printed strictly as a service to those Corvette owners who are interested in serious competition. The steps described apply particularly to the Corvette Fuel Injection engine. Many of the procedures, however, can be used on the other engines in Corvette's line-up.

There are probably as many different methods of accomplishing an engine tune-up as there are mechanics and engines. Certainly no individual method could be considered the only correct procedure. My methods have served me with considerable success, but if I appear dogmatic at times, please remember there is room for individual interpretation. The only restriction, of course, is that the adaptations conform to the latest standards of the SCCA. Even though my suggestions were definitely within SCCA bounds at the time of this printing, any serious competitor should check the standards thoroughly.

The fact that the Corvette engine has received such enthusiastic acceptance is very convincing proof of its quality. As with any engine intended for everyday usage, however, there are adaptations which must be made for the strains of competition. These adaptations fall into two main categories: (1) Procedures for tuning an engine before and after each race and (2) procedures for rebuilding the engine. My suggestions will cover these two categories, taking the pre- and post-race preparations first.

Following every race, I make a complete inspection for any oil, grease, water or fuel leaks. Then I clean the engine compartment and chassis thoroughly. This is an excellent time to inspect for missing parts, bolts, nuts, etc. Check very carefully for any broken or bent parts, paying particular attention to brake air scoops, brake lines, gas lines, radiator and radiator hoses.

Go over all the nuts and bolts in the engine compartment and tighten to the proper torque. Be sure that all motor mount bolts (both the front mounts and the rear mounts on the under side of the transmission) are torqued to the correct specifications. The mount bolts in the transmission tail shaft are critical because if they come loose, you may be saddled with the expense of a replacement part. It is a good practice to lock-wire these two bolts.

In the engine compartment, make a complete inspection of the exhaust pipe flange nuts, the exhaust manifold bolts, the injector bed plate bolts, injector housing nuts, the water outlet nuts, and especially the water pump bolts. It is a good idea to check these items after every practice or event during a race meet. To reach the water pump bolts, proper procedure necessitates that you remove the generator support attached to one of the water pump bolts. After tightening the water pump bolt, replace the support and tighten the nut finger tight. Then adjust fan belt to the proper tension and tighten the bolt on the generator. Finally, tighten the nut on the water pump end of the support. Repair any oil leaks, fuel leaks, or water leaks at this time. Then run the engine to operating temperature and make another careful inspection for leaks.

Check all radiator mounts and bolts, as well as hood hinges and latches. Carefully inspect the fuel injector pipes and replace them if there is any evidence of cracking or deterioration. Check all linkage for excessive play or looseness and be sure the throttle opens smoothly and closes all the way. The throttle return springs should be securely attached and strong enough to close the throttle instantly. They should not be so strong, however, that it requires excessive pressure on the accelerator pedal.

Clean the fuel filter and the injector drive cable, inspecting for any evidence of fraying or breaking. The cable housing and cable should be cleaned and lubricated with a quality lubricant such as Lubriplate. When you replace the housing and cable, be extremely careful not to kink them.

Next, remove the spark plugs and take a compression test of each cylinder; they should not vary more than 15 lbs. By comparing these readings with pre-race readings, you can keep a fairly accurate record of the engine's condition. If all cylinders check out within the 15-lb. limit, replace the spark plugs. (I use new plugs for each race.) The AC42-1 plugs with a .026 gap are excellent for road racing. Replace the carbon-center, high-tension wire with a copper core wire such as Packard 440. Use tight-fitting plug terminals to make sure they hold their place throughout the race. Replace any spark plug wires that show evidence of burning or breaking.

Clean the distributor and cap, inspecting for any cracks or carbon streaks. If the rotor has any cracks or carbon streaks, replace it. Inspect the points for any pits or evidence of burning. If they are pitted, they must be replaced. Do not try to correct them by filing. You will also have to replace the condenser and check for loose connections in the primary system if the pitting is excessive. Points that are blue on the ends indicate trouble in the resistor, and it may need to be replaced. Points that receive a clean bill of health can be cleaned by simply running a piece of clean paper through them. (This practice is frowned upon, but it works well for me.)

Next, lubricate the breaker cam with a lubricant designed to do the job. This can be obtained from your Chevrolet dealer. Check the dwell on a distributor machine. One can usually be found in garages, parts houses and at any Chevrolet dealer's. I block off one point and then set the opposite point to 29° dwell. After both points have been adjusted, they should give a dwell reading between 33 and 34 degrees. Now check for resistance. If the dwell procedure was followed correctly, the resistance should also be correct. Too much resistance must be reduced, however.

I use a different advance curve than that recommended by the manufacturer.

I prefer 9° to 10° advance in the distributor so that a full advance results at 3,000 engine rpm. To shorten the advance, I use a brass gas line ferrule of the correct inside diameter. I can then replace the neoprene bushing in the advance by slipping it on the pin. The outside diameter of the ferrule can be altered to the desired advance, and the ferrule can be soldered in place. It is important that you do a good job of soldering because if the ferrule falls off, you will have too much advance. A loose ferrule might also fall on the points and short them out. You can change the point at which the distributor is full-advanced by changing the two springs on the counterweights. It is sometimes necessary to install weaker springs, but you will have to turn to the trial-and-error method to arrive at the desired point. The distributor is a very important factor in winning races and the time spent is well worth the effort.

After installing the distributor and making sure all connections are clean and tight, set your initial advance to 18°. Next, make an additional time mark on the harmonic balancer. You can do this by placing the original mark at the upper end of the timing tab and marking the balancer at the lower end of the tab. The second mark is then approximately 22° advance of the original mark. After warming up the engine, you bring the rpm up to 4,000 and read the second mark in relation to the timing tab. Add 22° to whatever amount of advance you show on the tab, and you have the ultimate advance degrees. For example, if at 4,000 rpm your second mark lines up with the 16° advance mark on the timing tab, you add 22° and arrive at 38° full or ultimate advance. Apparently identical engines seem to want different spark leads or spark advances, but 38° ultimate seems to be a good place from which to start. The best spark lead for your engine can be found on a chassis dyno or by actual road tests. You'll find that spark advance also varies with the grade or octane of fuel you use.

I read the ultimate advance at 4,000 rpm instead of 3,000 even when the distributor is completely advanced on the distributor machine. In this manner, I have a 1,000 rpm cushion to be absolutely sure of a full advance. It is possible for the advance in the engine to vary slightly from the advance on the distributor machine, due to heat and vibration.

As a word of caution, you may find that the high initial advance affects the starting of the car. If this is objectionable, you could use 12° advance in the distributor. This reduces the initial timing, but you can still adjust the distributor to be completely advanced at 3,000 rpm. Remember: The distributor rpm is 1,500 when the engine rpm is 3,000.

After thoroughly warming the engine, you can check the valve lash adjustment.

(See the Corvette Service Manual for the adjustment procedure of hydraulic valve lifters.) It is very important that this is done accurately with a hot engine because a mere .001 difference affects the valve timing considerably. I adjust the valves with the engine not running. I mark the harmonic damper in 90° increments, starting with the factory T.D.C. timing mark.

Remove the necessary injector parts to permit removal of the left rocker cover. Adjust cylinder #1 using .008 on the intake and .016 on the exhaust. This may be done with a feeler gauge if you've had a good deal of practice. There is a P & G Valve Gapper available, however, that takes all the guesswork out of valve adjusting. (Figure 1)

You then turn the engine 270° or to the 3rd 90° mark and adjust #3 cylinder . . . 450° or two more 90° marks for #5 . . . and 540° or the next 90° mark for #7.

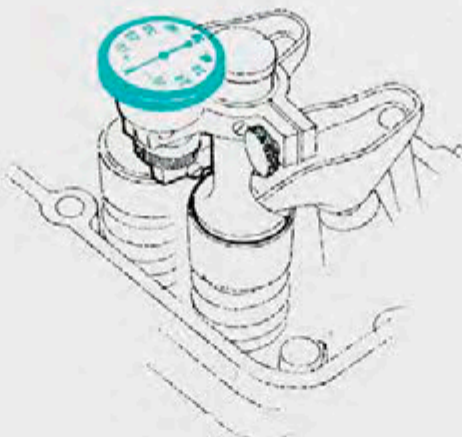


Figure 1

Replace the left rocker cover and the fuel injector parts and start the engine. Run the engine for a few minutes to be sure it's hot again. Then bring #1 to top dead center on its firing stroke and remove the right cover. Rotate the engine 90° or to the first 90° mark and adjust #8 . . . 180° (next 90° mark) and adjust #4 . . . 360° (two more marks) for #6 . . . and, finally, 630° (three marks) for #2. Then replace the rocker cover.

If you will be racing on a course where you feel you need a little more power on the lower rpm range, you can use .012 clearance on the intake and .018 on the exhaust. If you want more power in the

higher range, you can retard the cam -4° by using an offset pin in the timing gear. You will get very good all-around performance, however, by sticking to the standard cam setting and .008 intake and .018 exhaust settings.

I use 12.4 to 1 fuel ratio at full throttle. This is a slightly richer setting than that required for full power. It is the best for road racing, however, because it keeps the engine cool and tends to cut down high speed detonation. I use a fuel analyzer on a chassis dyno to arrive at the correct mixture. Enrich the injector by adjusting the enrichment lever stops. Never drill the nozzle metering discs.

Adjust the fan belt slightly tighter than specification, and be sure that the pulleys and the belt are in perfect alignment. The alignment of the belt is very important and will make a lot of difference in the number of races you finish. Be sure the generator pulley is in perfect plane with the other pulleys. It may be necessary to adjust the axis of the generator, shimming either the front or the rear mount on the manifold.

Check the clutch linkage for the correct amount of free travel before each race.

* * *

If I choose to rebuild an engine before the racing season or if I have an engine failure during the season that requires rebuilding, I use the following procedure.

When I tear down an engine, I keep accurate records of all parts with respect to the visual condition, bearing clearance, piston clearance, deck height, piston pin fit, side clearance on the rods, and clearance of the crankshaft, valve stem clearance, etc.

I begin by removing the heads and then the valves. After cleaning each valve carefully and inspecting for any excessive wear and evidence of burning or warping, I number each valve with dyken blue. The heads can be cleaned with a wire brush and washed in solvent.

I then inspect the valve seat and valve guide for any defects. Measure the valve stems and the valve guides to find the clearances. (I use .001 additional valve clearance over factory specifications.) If the valves are in good condition, I have them hard chromed (.003 plate) on the stems. Then tap the valve guides with a 3/16 tap. It is wise to start the tap from the top and go in within 1/2" of the bottom of the guide. Don't tap all the way through because it will allow the oil to go through the guide causing excessive oil consumption. By tapping the upper part of the guides, the valve stem gets better lubrication.

I then number the pistons and check the deck height of each one with a dial indicator to find top dead center of each piston. By using a depth micrometer, I measure from the top of the block down to the top of the piston. (Figure 2) This is, of course, exclusive of the popped-up

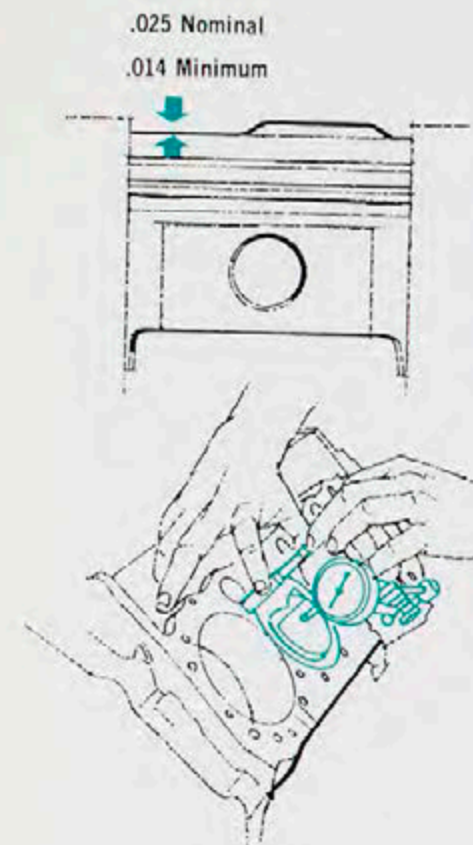


Figure 2

portion of the piston that protrudes above the block. For an accurate measurement, it is best to measure directly above the wrist pin. If you measure the piston 90° to the pin, it is possible to get false readings due to piston rock. When I bring piston #1 to the top dead center, I also check the mark on the harmonic balancer with the timing tab. If the marks do not line up, I make the correction right away. The chance of the marks being off, however, is very remote.

Next, remove the clutch and the flywheel. Inspect the flywheel very closely for any heat check marks. If there are any, the flywheel will have to be replaced. I always replace the pressure plate and clutch disc when I go through an engine. Don't use any pressure plate or clutch disc other than the standard high-performance Corvette's. In my opinion, they are the best available. Remove the oil pan and inspect for any dirt or other particles. Take off the oil pump and crankcase baffle.

I number both the rod and rod cap to correspond with the piston number. Then I plastigage the connecting rod bearings and record the clearances. Now, you're ready to remove the piston and rod assemblies. I use a special tool for this to prevent the rod bolts from nicking the crankshaft. (The tool: #J6305-01. Short lengths of plastic hose fitted over the rod bolts serve as a substitute.) Inspect bearings for any grooves, and pistons for broken rings, scuff marks and pin fit.

Remove the water pump, motor mount and the timing cover. Then check the timing marks. Remove cam gear and timing chain. By standing the engine on end, the cam can now be pulled straight up and out without the cam lobes marring the cam bearings.

Next, number the main bearing caps starting with #1 at the front of the engine. It is not necessary to number the rear main cap since it is larger, and there is no chance of getting it in the wrong position.

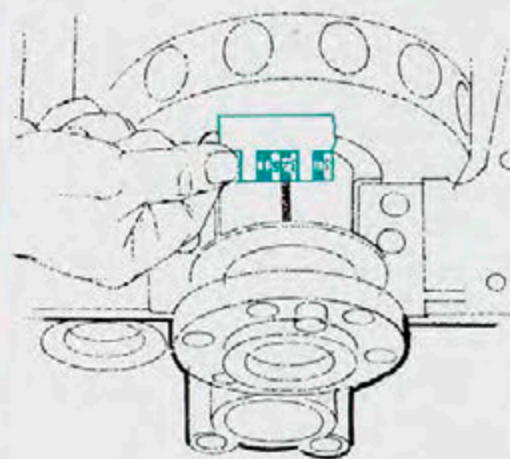


Figure 3

Plastigage all the main bearings and record the results. (Figure 3) Remove the crankshaft and inspect for any scratches, grooves, or nicks on the mains and throws. Inspect the block for any scratches, grooves or taper in the bore. In building the engine, we will assume that all parts are in specification and in good condition. If the block has imperfect bores, it may be necessary to re-bore, or if the crankshaft has imperfect bearing surface, it will be necessary to re-grind or replace.

If the deck clearance isn't .025 or if it varies from one bank to the other (or from end to end), I have the block trued by locating on the main bearing surfaces and machining to make each side exactly the same height from the main bearings and exactly 90° with the included angle. I hone the block for .007 skirt clearance with factory forged pistons or .004 with factory cast pistons. The correct size is determined by the piston size. Next, break all sharp edges (especially on the bore) and chamfer all head bolt threads. Remove all oil gallery plugs (both threaded and soft plugs) and, if possible, connect a steam cleaner to the galleries, forcing live steam through them. Next, get a large wash tub and put the block in it. Fill it with boiling water and, using a good detergent, wash the block thoroughly with a brush. Inspect the water jackets to be certain all core sand has been removed. Using a flashlight, you can look in the head bolt holes and through the

water passage holes. Be sure that water can pass between the cylinders. If there is any sand left, use a stiff wire (such as a welding rod) to remove it. Finish washing the block by connecting a hose to the hot water heater; rinse all galleries, water passages, bore, etc. with hot water to remove the impurities and the detergent. The hot water will dry sooner and reduces the chance of water standing in the small corners and galleries. I then use compressed air to blow all the galleries out. Then I finish drying the block. It is necessary to cover all unpainted surfaces immediately with a light oil to prevent rusting. The block is now absolutely clean and ready to be assembled.

I have the crankshaft ground .001 under the minimum factory specifications on all bearing surfaces. I also wash the crankshaft with a detergent, being careful to clean all the oil holes. The crankshaft is rinsed with hot water and the water is removed with compressed air. It must be covered with light oil to prevent rusting.

I check all the big ends of the rods for size and roundness. If they do not meet factory specs, I either replace them or have them reconditioned.

It is necessary to remove the pistons from the connecting rods. I press the piston pin out and hone the piston to a .0006 pin fit. I install the crankshaft in the block and install the pistons and rods using a slightly undersize pin. This makes it unnecessary to press the pins in at this time. Then I check each piston for the correct deck height. It may be necessary to machine the head of the pistons since the block has been trued. I note the amount on each piston, and then check the side clearance on the rods. For racing I use .025 side clearance. I note the existing clearance, remove the piston and rod assemblies, and check the fire land diameter. (This is the portion of the piston above the top ring.) This diameter should be .045 smaller than the bore. Any necessary machining of the piston (correcting the deck height, correcting the fire land diameter, etc.) can now be accomplished. If necessary, I machine the sides of the rods to get the proper side clearance. Equal amounts should be removed from the rods using the same throw.

You now check the end clearance of the crankshaft with a dial indicator on the end of the crankshaft. I use .010 to .012 end clearance which is somewhat more than factory specs. The end clearance is controlled by the rear main bearing. If there is not enough clearance, the rear main bearing can be removed and a piece of very fine emery cloth used to "sand" off the needed amount from the end of the main bearing shells. It is best to wait until now to arrive at the correct deck heights, side clearance, fire land clearance and crankshaft end play. The reason: since the engine was disassembled, a great

deal of work has been performed that affects these dimensions.

I send the pistons, piston rings, rods, crankshaft, harmonic balancer, flywheel and pressure plate, plus rings for one piston and inserts for one rod to a balancing expert. He balances all pistons and pins to within 1/2 gram of each other, as well as balancing both the small and large ends of the rods. He weighs a piston pin and rings and the rod with the insert to arrive at reciprocating and revolving weights. This enables him to take the proper percentage and attach the correct counter weights on each throw. He balances the crankshaft with these weights both statically and dynamically. Then he balances the harmonic balancer and the flywheel and pressure plate, marking the position in which the pressure plate fits up to the flywheel.

In the assembly of a short block, always use new main and connecting rod bearings. Wash all parts again to be sure they are absolutely clean. Inspect cam bearings and if they're not in good condition, replace them. Next install the upper main bearings (standard size M-400), making sure the bearings are clean. Put the crankshaft into position and place the lower main bearing in the caps. Put plastigage on the crankshaft and oil lightly. Torque the main caps to specs. Next, remove and read the plastigage. You should have .0025 to .0028 clearance. If you don't, it will be necessary to use different size main bearings to obtain this clearance. If the clearance is right, remove and clean the crank. Install rear main seals, lubricate the bearings with a good oil and install the crank. Torqued to specification, it should turn very freely.

Next, install the pistons and rods, using plenty of oil on the pins. Following manufacturer's instructions closely, install piston rings. Place insert M-400 in the connecting rod, oil the rings and pistons, and install tool to protect the crankshaft from the rod bolts. Place the rods and pistons in the block, using a ring compressor. Again, check the rod bearing clearance with plastigage. It should show .00225 to .0025 clearance. If the clearance is correct, clean the crankshaft with plenty of oil, then torque to specifications. Remove the plate from the bottom of the oil pump and check the gear end-play. It should have from .004 to .006 clearance. If it's more than that, sand the body of the pump down on a surface plate. Next, remove the spring from the plate and silver-solder the oil pickup tube to the plate. Then replace spring with a 1/16" washer to increase oil pressure. Install the baffle plate and oil pump. Be sure you use the proper bolt for the oil pump, and see that it is torqued to specification.

Install the cam and line up the timing marks. The gear end chain can now be installed. At this point, I degree the cam

out to be sure it meets specs. I do this by installing the lifters in the #1 cylinder, using a dial indicator to record opening, closing and lift in conjunction with a degree plate on the crankshaft. If the cam does not degree perfectly, I correct it by means of an offset pin. It may also be necessary to enlarge the attach holes. Corrections are rare, however, in this area.

The front cover, oil pan, and harmonic balancer can then be installed. I drill the end of the crankshaft for 3/16"-14 thread. Then warm the balancer up (generally in hot water) and install it by tapping it in place with a piece of tubing that has a larger diameter than the hole in the balancer. If you don't use the tubing, there is a chance of raising a burr on the hole, making it difficult to install the fan belt pulley. I put the pulley in place and use a 3/16"-14 bolt with a large washer to hold it tightly. (Figure 4) Then install the three pulley attach bolts. The front motor mount and water pump are easily installed with four gaskets—two between the motor mount and block, and two between the motor mount and the water pump. It is most important that the right bolts are used in the right places. If not, you may bottom out the bolt before the pump is tight.

Next, I rebuild the heads. First, break all sharp edges in the combustion chamber. Then grind the seats in the head, bringing them out to the diameter of the valve. Narrow the seats by the use of a 70° reamer. (I use .040 to .050 intake seat width and .060 to .070 exhaust seat width.) Reface the valves carefully, taking care that the valve stems are running

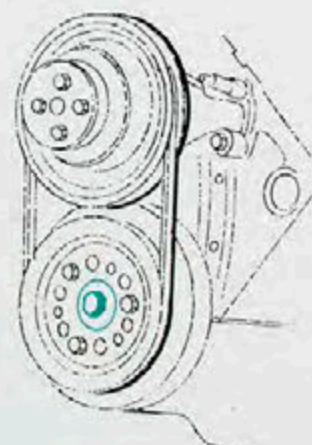


Figure 4

dead true. (I use 45° both on the seats and on the valves.) At the point where the 45° angle joins the radius underneath the valve head, I break the corner with a 30° angle.

I then lap the valves with a fine grinding compound. At this point, I measure the cc in the head of each cylinder. (Figure 5) They should be the same. If there is a slight variance, you may seat the valves lower in the small chamber, but it is best to make all chambers equal



Figure 5

to the larger chamber by grinding along the sides of the chamber and then milling the heads back to specification. It is important to keep track of the amount you lower the valve in the chamber so that you can grind a like amount off at the stem end.

After carefully cleaning the heads in a detergent, I assemble them with the springs at proper height. Be sure the valve springs are new. Then install the heads. Torque the head bolts to 75 ft.-lbs. using the proper pattern given in the Chevrolet manual.

Your Corvette engine is now ready to lead you into competition. Be sure to keep it in smooth running form throughout the season with a regular, well-planned maintenance schedule.

MERRY-MAKING,
SPEED
and an icicle or two...



CORVETTE PAYS TRIBUTE TO ST. PAUL'S

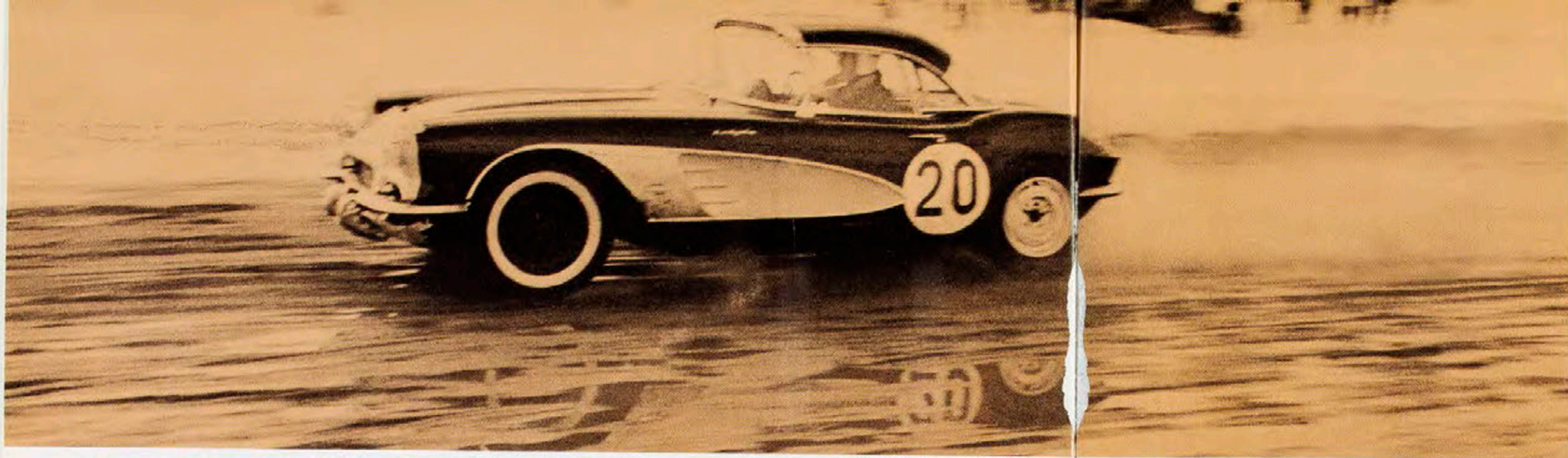
BOREAS REX XXVI

While King Boreas XXVI managed to ward off the King of Fire for most of the St. Paul Winter Carnival, his mythical counterpart, the King of the North Wind, was sent into exile shortly after the festivities began. Several days of melting snow and thawing ice couldn't dampen the spirits of the St. Paulites, however, as each scheduled event was enveloped in the atmosphere of revelry that characterizes the annual Winter Carnival.

It was some 76 years ago that the fun-loving folk of St. Paul first decided to prove to all America that the "Siberian" winters of Minnesota could be times of gay activity rather than hibernation. Taking the cue from Montreal's Winter Carnival, a group of ambitious citizens agreed upon a first-rate plan for drawing residents away from their fireplaces. And so in the year of 1886, when the first electric street railway was put into operation, the first malted milks came into existence, the Statue of Liberty was unveiled and Sherlock Holmes began seeking out England's most vicious criminals, St. Paul, Minnesota, became the site of the first American winter carnival.

Again following Canada's lead, a huge castle constructed entirely of ice was selected as the featured attraction of the 12-day festival. Members of the first Carnival Association sent an SOS to Alexander Hutchinson, designer and builder of Montreal's ice palace. He arrived in St. Paul on December 29, 1885, only to find the city fanned by balmy breezes and knee-deep in mud. Within a few days, however, Minnesota's typical January





IT TAKES A LOT OF KNOW-HOW AND A STREAK OF DAREDEVIL TO COMPETE ON SAND-COVERED ICE.



FLASHING BLADES AND DETERMINED COUNTENANCES... THERE'S A RACE TO BE WON.



SCHOOL BOOKS ARE DROPPED IN FAVOR OF THE DOWNTOWN SKATING RINK.

COWBOYS DANCE WITH INDIANS, MEXICANS HAVE A FIESTA, AND PIRATES ARE "GOOD GUYS."



weather began to show through. By the 10th of January, 14 inches of snow had fallen, the average temperature was 3.8 degrees above zero, and Hutchinson had the ice he needed to begin work.

Central Park was chosen as the logical site for the spectacular structure, and 200 men were put to the laborious task of placing the more than 30,000 blocks of translucent ice used in its construction. The finished product was a majestic edifice 180 feet long and 154 feet wide with a principal tower rising to a height of 106 feet. Even the mythical Boreas couldn't have asked for a more regal abode.

According to carnival legend, Boreas was forced to defend his glittering palace against the onslaught of Vulcan, King of Fire, who resented the reigning monarch's works. The carnival followed the legend to the letter, and over 20,000 fiery Roman candles were used in the first mock attack. The castle itself was illuminated by electric lights from foundation to turret. It was an awe-inspiring sight that held spectators spellbound until a temporary armistice was finally signed by both Kings for the good of their people.

The carnival proceeded as natives and tourists enjoyed speed skating, tobogganing, figure skating competition, a costume ball, dog sled races and a fun-filled parade. Tradition was in the making . . . and the spectators showed their approval by turning out in droves to watch and participate in each event. The people of St. Paul had created something worth attending long before the advent of our modern knob-twisting pleasure gadgets. And they started with one simple element . . . winter.

The finale to the 1886 St. Paul Winter Carnival came in the form of another battle. Temporary truces had become unsatisfactory to the desires of Vulcan, and he again attacked the palace. This time, however, the challenger was not to be denied. Vulcan besieged the fortress until the defenders were out of "ammunition." Boreas' queen, the Queen of Snows, suggested that her "husband" surrender peaceably since his reign had been one of indisputable success. Boreas finally conceded, and the 1886 Winter Carnival came to an end.

The appearance of the sleek '62 Corvette at this year's Winter Carnival is an indication that things have changed since the people of St. Paul first conceived their festival. Due to the extreme expense involved, the ice palace no longer graces the city with its regal splendor. Radio and television now carry broadcasts of the special events into the homes of thousands of Americans throughout the country. Events such as the bridge tournaments, hockey games and sports car races have been added. The traditional parades are, of course, more elaborate with motorized floats replacing the horse-drawn sleds of yesteryear. But the essence of the carnival spirit remains ever intact. The carnival was originated to provide winter pleasure during the deep-freeze season in Minnesota . . . and after 76 years, fun is still the rule during the carnival period.

The downtown skating rink and the one-half-mile toboggan slide claimed popularity honors again this year. As usual, youngsters of all ages flocked to both scenes whenever the burdens of local classrooms permitted. Last year, more than 17,000 people made use of the skating rink and 60,000 riders were tallied at the toboggan run. Crowds were undoubtedly somewhat slimmer this year due to the comparative heat wave which imposed itself. (Temperatures actually rose as high as the mid-40's.)

The numerous lakes in the Twin City area provided opportunity for many other outdoor activities on ice. Skating, for example, is a State pastime during the winter months in Minnesota. It's a natural that the National Speed Skating Championships should be a part of the St. Paul Winter Carnival for the past 17 years. Approximately 250 of the nation's top racers, including a good number from nearby communities, sharpened their blades for the stiff competition on Lake Como.

Other "firsts" found in the annals of St. Paul Winter Carnival history include the annual ice fishing contest held on White Bear Lake and the mutt race on Lake Como. Fishermen by the thousand dot the frozen lake each year to vie for honors in the competition. The mutt races attracted an equally enthusiastic crowd of young folk who wanted to show off their dogs. Simulating the



VULCAN AND CREW DO RACING BATTLE AGAINST KING BOREAS ON THE ICE OF LAKE PHALEN.



YOUNGSTERS GET 2,000 FEET OF BREATH-TAKING THRILLS ON THIS TWO-GATED TOBOGGAN SLIDE.

strategy meetings. And they didn't know the half of it.

Since power was more hindrance than help, the racing committee didn't feel it necessary to divide the entries into "Modified" and "Production" classes. This was to be a race of traction and driving skill, and as it was later proved, the wee Mini-Minor had just as much chance as the Corvette-powered Echidnas. Classes were divided on the basis of engine size and body style. Three races evolved: an event for sports cars with engine displacements under 2000 cc, one for sports cars with displacements over 2000 cc, and a special event for junior-sized sedans in the automotive world.

An unwelcome sun was trying desperately to make an appearance through the dense cloud layer as the starting flag was dropped on the first event shortly after 1:30 p.m. Thirteen cars, 2000 cc and under, kicked up 26 sprays of sand and sputtered their ways forward on the 8-lap contest that was to present them with 6.4 miles of unpredictable, thrilling competition.

Into the first turn of the kidney-shaped track, it was #40 Morgan making an early bid for the lead. He got his position, but it was obvious that it wasn't going to be any picnic trying to hold it. Speed was still important . . . and the droning TR-3's on his tail meant business. There was an advantage in being first around the still fairly dry track, and every driver knew it.

During the first and second laps it looked as though the #15 TR might be the Morgan's toughest competitor. And sure enough, by the end of the third lap, the Morgan was running second, the white TR-3 first, and the #16 TR-3 third. Also, there was a battle developing for fourth. A daring young man in an MGA was taking the corners with complete abandon in his chase after the #12 TR-3.

The Morgan had dropped back to 3rd when the elements stepped in to play a hand. The leading TR-3's spun out on successive laps, and #40 was now battling with the previously 4th and 5th place TR-3 and MGA. It was a close three-way contest until the MG fell prey to one of the slick bends in the course. The Triumph was then making his bid alone. He poured it on, and in the final lap, it paid off. The Morgan had to be content with a second as the persistence of the TR-3 was too much to handle.

The second race of the day saw 14 cars in the 2000 cc and over class pit their power against each other in a contest which had a larger percentage of DNF's than any other event. Of the starting field, four cars were able to take the checkered flag after the 8th lap. It was slippery out there, and the big bombs had plenty of trouble negotiating the turns.

The field was peppered with some of the nation's best known machinery: Echidnas, Porsches, a Corvette-powered D-Jag, a Birdcage Maserati, an Austin-Healey 3000, and a Fuel Injection Corvette. From the beginning, the wise old men of the track predicted that the rear-engine, rear-drive Porsches would be the cars to beat. The ice track was literally covered with wet slush generated by the first race, and the Porsche traction was just about the only thing able to cope with it. Nobody was quite willing to concede, however, and it was soon apparent that the little German speedsters were going to have their hands full.

The #21 Echidna, a Minnesota special-built racer, got the jump for an early lead in front of the Golden Rod Special, two Porsches, and the Corvette. And surprisingly enough, the driver held that lead right up through the sixth lap. The Porsches weren't to be shunned quite so easily, however, and when the Echidna finally developed engine trouble, they were on the spot to take over the one-two positions.

The Corvette, driven by novice Jack Martin, occupied a 4th-5th position throughout the race. When other cars began losing the road, however, the 24-year-old native was able to hold on for a 3rd place finish.

For the fans who enjoyed watching the spinouts, the sedan race was rather uneventful. The whining little bugs took to the track with comparative ease as their low-power engines whisked them around the circuit with a finesse unobtainable by the big cars. The #28 Mini-Minor took the lead on the first lap and never lost it once on the next seven.

The real race developed for the second and third slots. Though a blue Saab grabbed second and was able to hold on for the entire race, he was pushed mightily by a Morris 850 who moved up from a last place starting position. It was a nip and tuck battle for the 7th and 8th laps, but little Morris #3 didn't quite have it across the finish line. First, the Cooper-powered Mini-Minor . . . second, Saab . . . and third, the Morris 850.

After the third race, the track was in such a wet, slippery condition that officials decided to shorten the distance of the two final contests. The consolation race went from a scheduled 8 laps to 5 laps, and the feature race was reduced from 15 to 8. For the thousands of spectators who lined the shores of Lake Phalen to watch the festivities, it was a rather disappointing announcement. In the interest of maximum safety, however, the decision was a wise one.

Some 15 cars were eligible for both the consolation race and the feature race. There was no longer any doubt in anyone's mind who had the advantage. The puddles were so plentiful and the spray so strong that it was almost impossible for drivers in the open cars to find the course. Again, it was the day for a sedan. A Volvo proved it in the consolation race, and the #28 Mini-Minor came through with another win in the feature race.

Saturday's "racing activity" wound up with another round of rivalry between Boreas and Vulcan. Driving his traditional fire engine, Vulcan took his starting position to do battle with the King of the North Wind. Boreas, taking no chances, decided to stick with the winningest car of the day—the Mini-Minor. The weight of the fire engine gave it an advantage enjoyed by no other contestant all day, and Vulcan managed to give the little car something of a battle. Number 28 knew the track, however, and wasn't about to end a perfect day on a sour note. In a photo finish, it carried Boreas across the finish line . . . first, by a bumper.

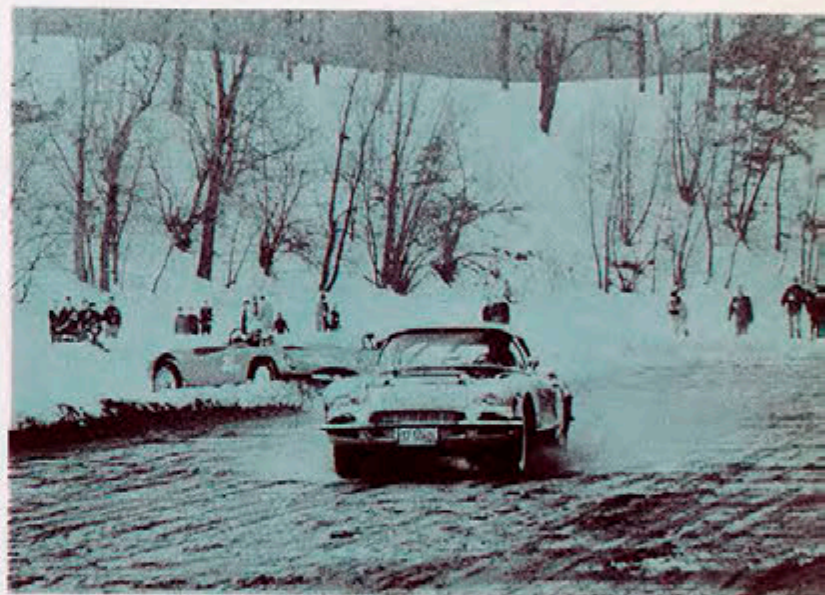
Saturday night heralded one of the most spectacular parades ever presented as part of the Winter Carnival. Scores of drum and bugle corps, military marching units and high school bands set the tempo for the 2-hour extravaganza which proceeded through downtown St. Paul. More than 30 floats, every one aglow with twinkling lights, depicted this year's theme—"Buttons and Bows." And Doug McClure (TV's "Checkmate" star) was one of the featured guests.

Led by King Boreas XXVI and his Queen of the Snows, the Torchlight Parade is the only parade in the U.S. which passes through an auditorium. Spectators who don't care to brave the cold out-of-doors can purchase tickets and watch the entire show from the comfort of the auditorium.

The last two days of St. Paul's 1962 Winter Carnival featured the ski jumping contests and the opening performance of the "Ice Capades." Following tradition, Vulcan was successful in his attempts to dethrone King Boreas, and the "Ice Capades" provided the background for a salute to Vulcan, King of Fire. As was Vulcan's wish, the citizens of St. Paul returned to their fireplaces and work benches to wait out the rest of the winter.



PITY THE DRIVER IN THE OPEN COCKPIT.



OOPS . . . THERE'S ANOTHER SPINOUT.

BUT THE RACE GOES ON AS IF NOTHING HAPPENED.



TREMENDOUS TECHNICAL TRIFLES

'62 suspension modifications, spark plug warning, new service manual and dual fan belts

'62 SUSPENSION MODIFICATIONS SENT TO SCCA AND FIA SANCTIONING CHAIRMEN

A letter sent to sanctioning chairmen of both the SCCA and FIA technical committees by Chevrolet Engineering spells out certain dealer-installed items for Corvette drivers interested in active competition.

Among the items are heavy-duty front springs, Part #3748140, and heavy-duty rear springs, Part #3748143. These springs are identical to those used for heavy-duty service on 1957-59 Corvettes. Heavy-duty front shock absorbers, Part #5543738, and heavy-duty rear shock absorbers, Part #5543739, are listed in conjunction with these springs.

Other items include a 37-gallon fuel tank, Part #3823051, and a heavy-duty brake unit, Part #3823053. The brake unit includes larger inside-diameter drums and new brake shoes with thicker pads. The assembly incorporates self-adjusting features.

A front auxiliary stabilizer bar unit is also offered, Part #3823052. This assembly consists of a .750" diameter stabilizer bar and necessary attaching parts. The bar mounts behind the front suspension (see illustration) and is used in addition to the standard Corvette front stabilizer bar. Functions of the auxiliary bar are to increase roll stiffness on turns and to help decrease understeer.

Any Corvette driver interested in this equipment should contact his local Chevrolet dealer. These items can be fitted to all Corvettes from 1957 through 1962. Owners of Corvettes equipped with these items will not alter their production class standing according to FIA and SCCA rulings.

44-FF SPARK PLUGS NOT RECOMMENDED FOR CORVETTE!

A national magazine recently reported that AC 44-FF spark plugs can be used for Corvette V8s. The 44-FF plug has a $\frac{1}{8}$ " reach—longer than standard AC-44 or 45 plugs with $\frac{3}{8}$ " reach. Type 44-FF plugs extend two full threads into the combustion chamber when installed, and their use in Corvette V8s is emphatically *not recommended* by Chevrolet Engineering, since they will interfere with the pistons.

NEW CORVETTE SERVICING GUIDE AVAILABLE IN MARCH

A new Corvette Servicing Guide is being prepared. The new manual will be ready sometime late in March, 1962. It will contain up-dated information on 1962 engines and fuel injection systems.

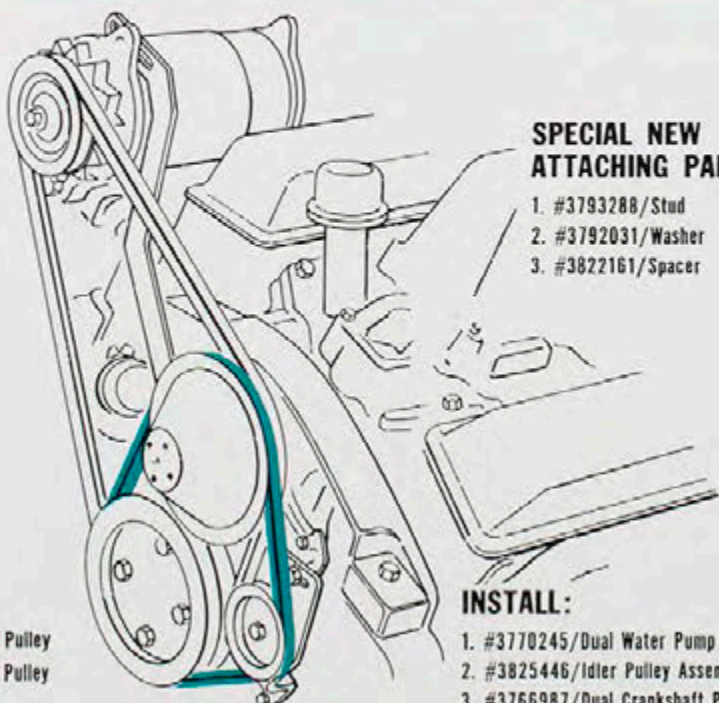
DOUBLE FAN BELT INSTALLATION ADDS TO DURABILITY OF COMPETITION ENGINES

For added reliability on Corvette engines subjected to continuous high-speed operation, a special double fan belt system has been released. The parts are: a double-flanged crankshaft and water pump pulley, a new idler pulley assembly, an additional fan belt, plus special and standard attaching parts. With this installation, the original fan belt is retained.

Owners who want to install this modification may refer to the illustration (right) for approximate location. All new parts listed will be available on special order from Chevrolet dealers.

REMOVE:

- #3724816/Water Pump Pulley
- #3720616/Water Pump Pulley Reinforcement
- #3756328/Crankshaft Pulley



INSTALL:

- #3770245/Dual Water Pump Pulley
- #3825446/Idler Pulley Assembly
- #3766987/Dual Crankshaft Pulley
- #3822672/Second Fan Belt

SPECIAL NEW ATTACHING PARTS:

- #3793288/Stud
- #3792031/Washer
- #3822161/Spacer

NEW OFFICERS AND THE '62 CONVENTION SITE SELECTED BY NATIONAL CORVETTE COUNCIL GOVERNORS



JAMES HOPPIN, NEW NATIONAL COUNCIL PRESIDENT-ELECT, AS HE ADDRESSED THE COUNCIL'S CONVENTION IN ST. LOUIS LAST JUNE.

Governors from a number of National Council of Corvette Clubs convened at historic Botsford Inn just outside of Detroit, Michigan, on January 12, 13, and 14. Their purpose: to chart the course of the Council's activities during 1962. The Governors, elected by each Council member club, gathered to discuss matters of membership, an active drivers' school program and nomination of officers to serve until 1963's National Convention.

Mr. Andrew Baumgardner, the Council's Vice President, disclosed plans for driver's schools to be sponsored by local Council clubs. "These schools will be held on authentic road circuits all over the country. They will be under strict safety controls and will allow the novice driver to learn the 'feel' of his Corvette," Mr. Baumgardner, a licensed competition driver, stated.

Los Angeles, California, was picked as the site for the 1962 National Convention. In addition, plans for NCCC rallies were discussed. Mr. William Broderick from Queen City Corvette Club asked to host the Council's first sanctioned rally.

National Council officers were placed in nomination by the Governors: Mr. James P. Hoppin, President; Mr. Andrew J. Baumgardner, Vice President; Miss Margaret Orscheln, Secretary, and Mr. John Heidacher, Treasurer. (Since the January Governors Meeting, Council members have voted the nominees in as the elected candidates.)

Interested clubs or individuals may write directly to Mr. Hoppin, new President-elect, at his home, 941 Alden Drive, Lansing, Michigan, for full details on membership and activities.



CORVETTE SHIVERS TO LIFE IN CRUEL ARCTIC WEATHER

When Corvette owner Fred Bauhaus, who lives in Yellowknife, Northwest Territory, Canada, stepped outside around 10:00 a.m. one morning in January, the thermometer was hovering at 56 below zero! In spite of this intense cold, Fred reports that his

Corvette was able to start. He also points out that his Corvette's fiberglass body holds up well in the frigid surroundings. Sharp-eyed enthusiasts will note the '62 rocker panel molding installed on Fred's earlier model Corvette.

BIG BROTHERS

PINK

CORVETTES

& & & & &

CONVIV- IALITIES

EDITOR'S NOTE: Around Pittsburgh, Pennsylvania, sports car clubs abound as they do around most large metropolitan areas. Usually, only one or two clubs stand out, and the Corvette Club of Western Pennsylvania is one of these. Organized in October, 1958, the CCWP now supports ten active competition drivers, is a leader in local sports car activities and is governed by a hard-driving racing group. Don Yenke, a charter member and driver of national recognition, tells the story behind CCWP's successes.

BY DON YENKO

ENTHUSIASM OVERCOMES APATHY—When Mike Mims and I originated the Corvette Club of Western Pennsylvania, we had no idea what the future held. We were in an area of dwindling club interest, apathy toward "marque" clubs and poor attendance at events and meetings. Our investigation of other clubs turned up three basic reasons: lack of organization, mismanagement, and poor planning. To succeed, we realized we would have to offer prospective members: (1) a planned program of interesting events, (2) technical tips for their cars, (3) driving instruction by licensed competition drivers, (4) a satisfactory parts arrangement at most of the local dealerships, (5) an interesting monthly newsletter, and (6) an organization exclusively Corvette.

One of the decisions at our first Board of Directors meeting was to keep our club all Corvette owners. We didn't care if we had only 40 or 50 members, but they all had to own a Corvette. We thought that our Corvette-owner limitation would restrict our membership, but instead we found that it turned out to be an incentive factor, and our membership increased.

Our first project was to make sure that every Corvette in the area had one of our little introductory slips tucked under its windshield wiper, telling our story. Subsequently, all the Corvettes in the Pittsburgh area were deluged with propaganda. Even members' cars got slips. The only way one could stop it was to join and sport our CCWP emblem on his car. We can identify our members at night, too, since CCWP Corvettes are wired so that their parking lamps remain on with the headlights, a la Great Britain. It wasn't long until we accumulated 50 members.

Once we enlisted our members, we took great pains to keep them. Since its inception in October of 1958, less than 2% of our membership per year has strayed. It has increased at an average rate of 34% per year. (The market for used Corvettes in Western Pennsylvania is a hot one.) Each Board member was assigned an equal number of members to contact via telephone prior to each event.

If you, as a member, missed an event, your "big brother" Board member would call and tell you that you were missed and, in a friendly way, urge you to join in the next one. It worked like magic for us.

COMPETITION-ORIENTED ORGANIZATION — From the beginning, CCWP was deliberately "competition ruled." Of the original Board of six, three were licensed competition drivers and two more qualified for their licenses within the year. Needless to say, the first events we had were a wee bit "racy" . . . quarter-mile dirt oval time trials, high speed autocrosses, a smattering of field trials, acceleration trials for the drag boys, and gymkhanas. We tried a rally or two but determined that the real backbone of spirit lay with the heavy-footed boys . . . and girls, for that matter. We have actively encouraged women competitors, too.

A questionnaire sent to our membership determined where the activity interests lay. With this as our guide, we've set up the kind of events that everyone wanted. And, at all of our events, licensed competition drivers act as instructors, actually driving other participants around the course, demonstrating the correct line and technique of Corvette handling.

After each event we hold—without fail—a party affectionately known as the "Conviviality." Here, immediate presentation of trophies is made and most of the local heroes (competition drivers) gather. At the same time, coming SCCA race events are announced and the participating drivers encourage members to attend as their pit crew. This close association of drivers and members has encouraged many members to enter novice races and drivers' schools. The competition drivers turn out en masse at these schools and novice races to assist our fledgling Fangios. As a result, two of our lady members have national competition licenses.

When our 1961 agenda called for preparation of a racing team at Sebring, ten members and their wives aided



A YOUNG CCWP "TIGER" BENDS HIS CORVETTE THROUGH HAY-BALE MARKED COURSE, WHILE SPECTATORS IN MORE SEDATE TRANSPORTATION ENJOY THE SHOW.



PRESIDENT BILL BOSTROM AND HIS WIFE CLAIRE OPERATE THEIR CLUB'S TIMER, ACCURATE TO 1/10,000 OF A SECOND.

us in the preparation of the biggest private Corvette effort ever to brighten the drab landscape of the Sebring airport. Our members helped refuel, took pictures, helped with timing and scoring, or just rolled tires. The race had its more discouraging moments, but our crew worked hard enough to place our car third in class, overcoming terrific mechanical quirks of fate in the process. It was a real moral victory—and many were heard to say, "Wait till next year."

The longest 1961 production race in the country—300 miles—was held last June at Elkhart Lake, Wisconsin. We entered two big white fire-eating beauties: #10 co-driven by Ed Myers and Grady Davis, and #11 driven by Ed Lowther and myself—all CCWP members. What should have been a Ferrari victory turned out to be a Corvette sweep. Car #11 gave up the lead only while refueling.

CCWP does its share of contributing to sports car interest in our area. Of the eight Board members on the local Steel Cities Region of SCCA, five are Corvette Club

members. Three of the five regional SCCA contest board representatives are CCWP members. And both last year's and this year's SCCA Regional Executive (comparable to office of president) are Corvette Club members. In all, over 30 Corvette Club members belong to the Steel Cities Region. SCCA around here is really Corvetteville.

PUBLICITY ACCOMPLISHMENTS—LOCAL AND NATIONAL

Our publicity chairman Ross Harris and his crew send reams of material to local news media announcing forthcoming CCWP events. They also promptly report the results. The newspapers soon started reporting race winners as Corvette Club members instead of Sports Car Club of America members. A PA system at our events announces to spectators that the members are driving the superb handling, beautifully designed, powerful Corvette—America's only true sports car. Our President Bill Bostrom signed up Martin Milner and George Maharis of the "Route 66" TV show as members. When Commander Shepard, a Corvette owner, made his historic sub-orbital flight, Bill presented him an honorary membership and a trophy inscribed "Fastest Time of Day, May 5, 1961." We've had Zora Arkus-Duntov, Chevrolet's Director of High Performance Vehicles, and Dr. Richard Thompson, eight-time national racing champion, as speakers at two of our social meetings.

Our national publicity comes from the Club's monthly medium, *Flying Fiberglass*. Indefatigable "editoress" Donna Mae Mims (a regular correspondent for a national magazine) handles the gigantic job of writing, editing, typing, printing, assembling and mailing *Flying Fiberglass* to our present 160 members, plus 32 subscribers from all sections of the country. In her "spare time," Donna races a pink Corvette and is the only woman Corvette driver in the U.S.A. to receive SCCA national points in 1961. All of our publicity is geared to instill pride in owners of Corvettes and to make the public aware of the fact that America can be justly proud of this contribution to the motoring sport.



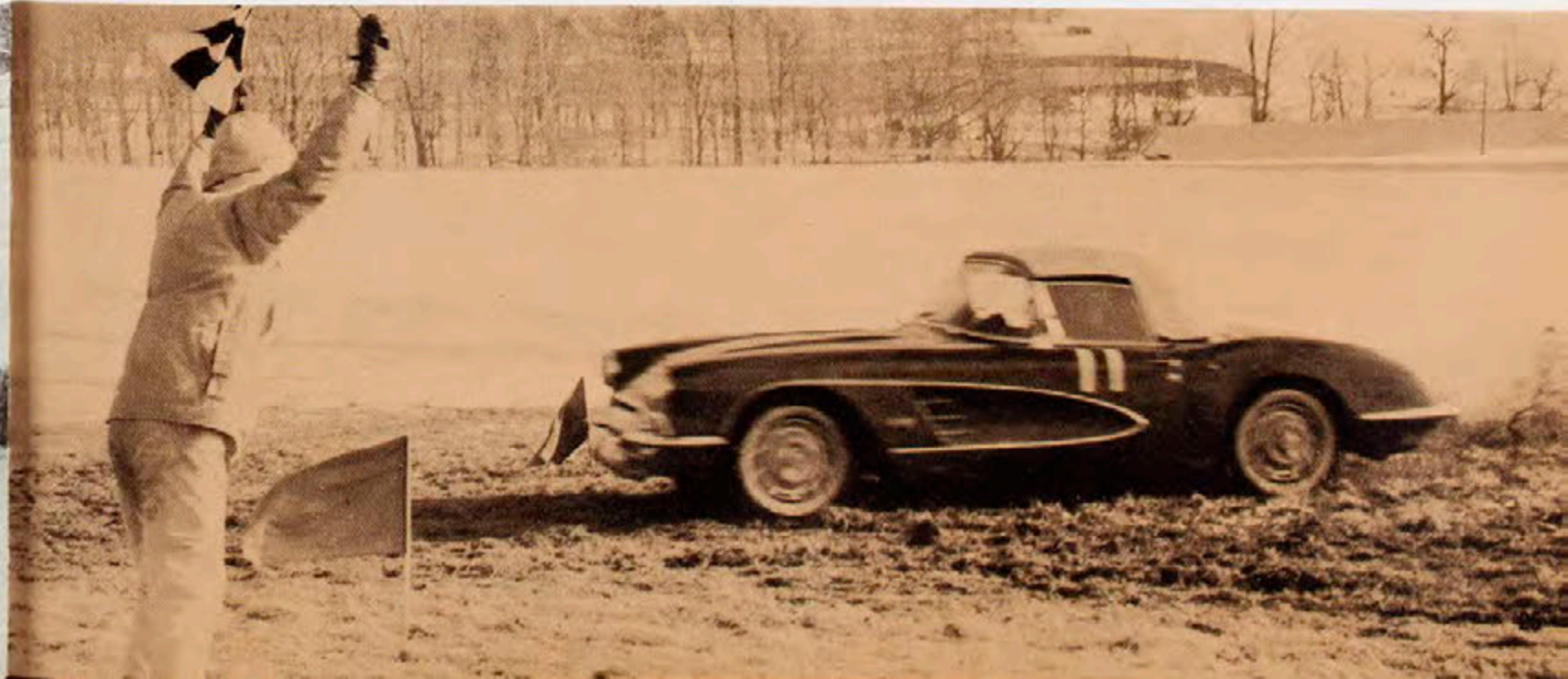
SOME CREW MEMBERS GAS IT UP WHILE OTHERS WORK HARD UNDERNEATH THE CCWP CORVETTE ENTRY AT SEBRING, 1961.

VARIETY OF AGE GROUPS—All ages from 16 to 65 (some possibly over if we knew the truth) are represented in CCWP. Our youngest licensed SCCA race driver is 21 and our oldest is 65. We believe we perform a real service for the young Corvette driver when we can give him an opportunity to safely and legally drive at speed (under excellent supervision) at least once a month. An elaborate point system (published in *Corvette News*) encourages members to work toward the beautiful Chevrolet annual trophy for outstanding membership. We have added trophies for second and third. Points are given for (1) participation, (2) winning, (3) working, and (4) recruiting new members, with monthly standings published in *Flying Fiberglass*. We feel we have proved to the Corvette owners in our area that this is not a sport for young men only, and they really don't know much about having fun until they join us.

A RATHER FAST LEFT TURN AT A CCWP AUTOCROSS. NOTE THE ADEQUATE SPINOFF SPACE PROVIDED IN CASE OF A BORBLE.



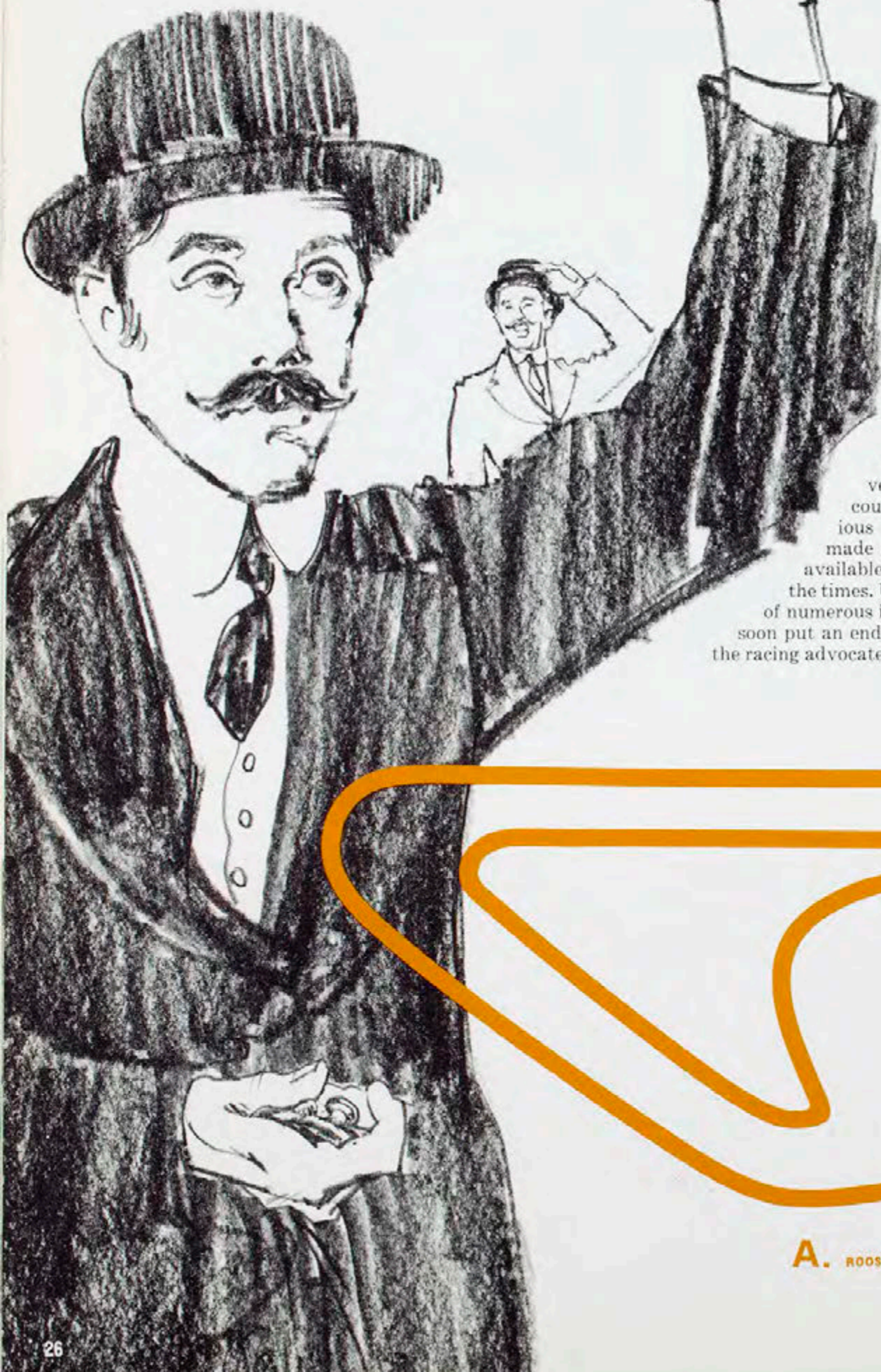
NOTHING LIKE A GOOD MUD BATH FOR VARIETY, ALTHOUGH IT DOES BECOME A TRIFLE SLOPPY.



NOSTALGIA AND

NOWADAYS ON

AMERICA'S DIRTS AND OVALS



From the very beginning, man has had an inclination toward speed. He ran to catch food . . . he ran to escape enemies . . . and he ran to prove athletic prowess. With the domestication of animals, man rode for speed as well as transportation. Small wonder, then, that with the advent of the automobile, enthusiasts were quick to pit one car against another in a contest of speed.

In the earliest days of American automotive history, there were no tracks upon which the speed devotees could vent their desires. Not to be discouraged, however, the more ingenious of the prospective speedsters made use of the facilities which were available—namely the crude roads of the times. Understandably, the complaints of numerous irate farmers and buggy drivers soon put an end to this foolhardy activity, and the racing advocates were forced to turn elsewhere.

The early automobile clubs provided the necessary shoulder for the enthusiasts to lean upon. Through the strength of organization, these clubs, which had been originated to assist motorists in their service and travel needs, soon adopted the additional responsibility of planning and staging the race events requested by so many of their members.

Due to the absence of established tracks, the auto clubs again turned to the "highways." This time, however, they received permission to close off the roads to the passing buggy traffic. When it was absolutely necessary to cross a main intersection, drivers were required to slow to safer speeds. In this manner, the auto clubs protected themselves from future criticism for endangering lives and property. Anxious citizens were appeased, and the speed bugs had their races.

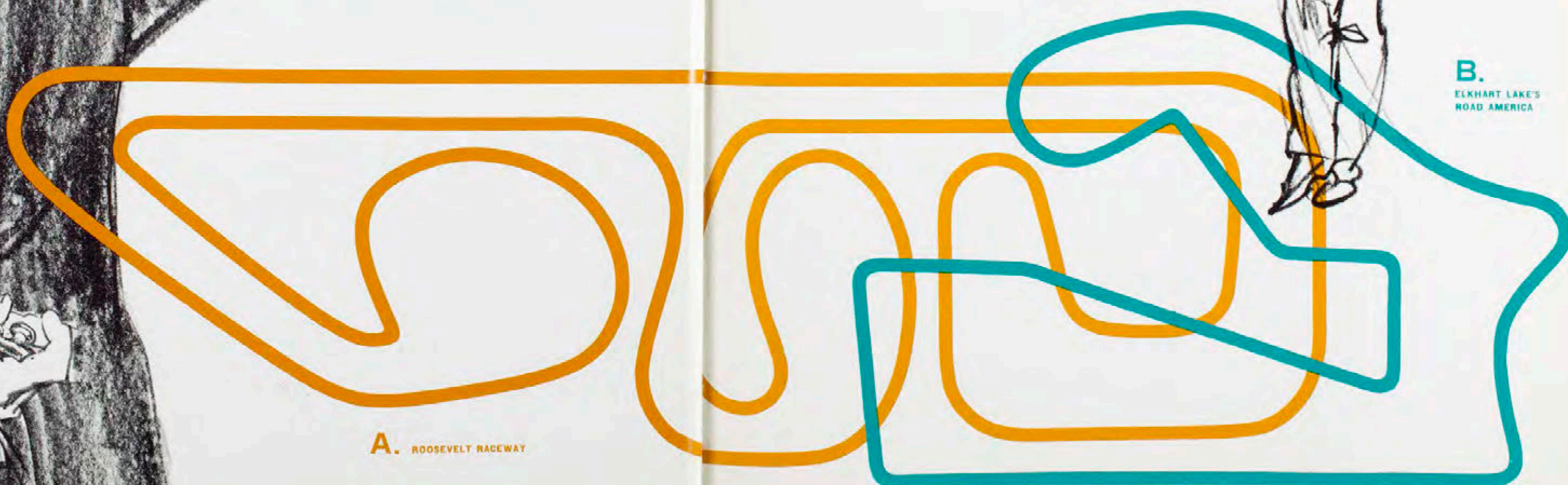
Just such a race was named after William K. Vanderbilt, Jr. Vanderbilt, besides being heir to a fabulous industrial fortune, also created a rich heritage of American motor sports tradition. His conquests as a participant in the sport are known, but his main contribution to the motoring scene was the New York State race which he sponsored.

Planned by the American Automobile Association in 1904, the event was scheduled over a roughly triangular course 30.24 miles long. The route led past New York's smarter residences, through cultivated farm land and around urban districts. The roads were partly macad-



B.
ELKHART LAKE'S
ROAD AMERICA

A. ROOSEVELT RACEWAY



amized and partly oiled for the occasion. They were very narrow; no one gave a thought to any two cars riding abreast.

Crude as it may have been, the course of the Vanderbilt Cup race must certainly be considered one of the fore-runners of today's modern tracks. It marked the first time in American history that automobile competition received international attention. Though the race was forgotten after 1916, it had been run over the same course for six years of its existence. When the classic was finally revived in 1936, it went to a brand new \$1,000,000 track at Westbury, Long Island—the Roosevelt Raceway.

The Indianapolis Speedway, perhaps America's best known track, also had its origin in the early motoring days. It was in 1909 that the dirt-surfaced two-and-a-half mile track was first opened and dedicated to the proposition that upon its surface the American automobile would mature. Many students of automotive progress contend, however, that the only real contribution to come off the track of Indianapolis is the rearview mirror.

The first race run at Indianapolis took place over a distance of 250 miles. A driver and mechanic were killed, and three more men lost their lives in subsequent races. The final race of that day, a scheduled 300 miles, was called to a halt after 235 miles. The track was later repaved with brick. The resulting surface was good for its day, but the bricks offered poor adhesion for rubber tires and made for a jolting ride. Even today, after an asphalt resurfacing, drivers still respect the rough ride at Indianapolis.

The depression years delayed America's continuous striving for speed. Many famous automobile manufacturers were forced out of business, and those that were able to weather the storm were not so intent on pushing racing merits as a selling feature. It wasn't until after World War II that service men returning from Europe helped put America back on the sports car racing stage. The nation had time and resources to undertake motoring as a sport and, once again, racing took on importance.

One of our finest contemporary tracks in Elkhart Lake, Wisconsin, was once the scene of a beautiful but tricky road race. Traversing a winding circuit around the lake, drivers all too often found themselves unable to negotiate the treacherous curves. The accidents which resulted spurred the construction of a four-mile circuit that equals the beauty and stature of any other track in the world.

Five hundred acres of rolling Wisconsin countryside provide an extravagant setting for the 3-lane asphaltic concrete course that bends, twists, and stretches out within the fenced-in backdrop. On each side of the paved surface, a gravel shoulder, bound in place by a chemical, is so hard that it can be driven safely at high speed. Every precaution has been taken to make the classic events which take place at Elkhart as safe as possible for

all concerned. Safety with a challenge . . . no wonder Road America is regarded as a favorite with race drivers the world over.

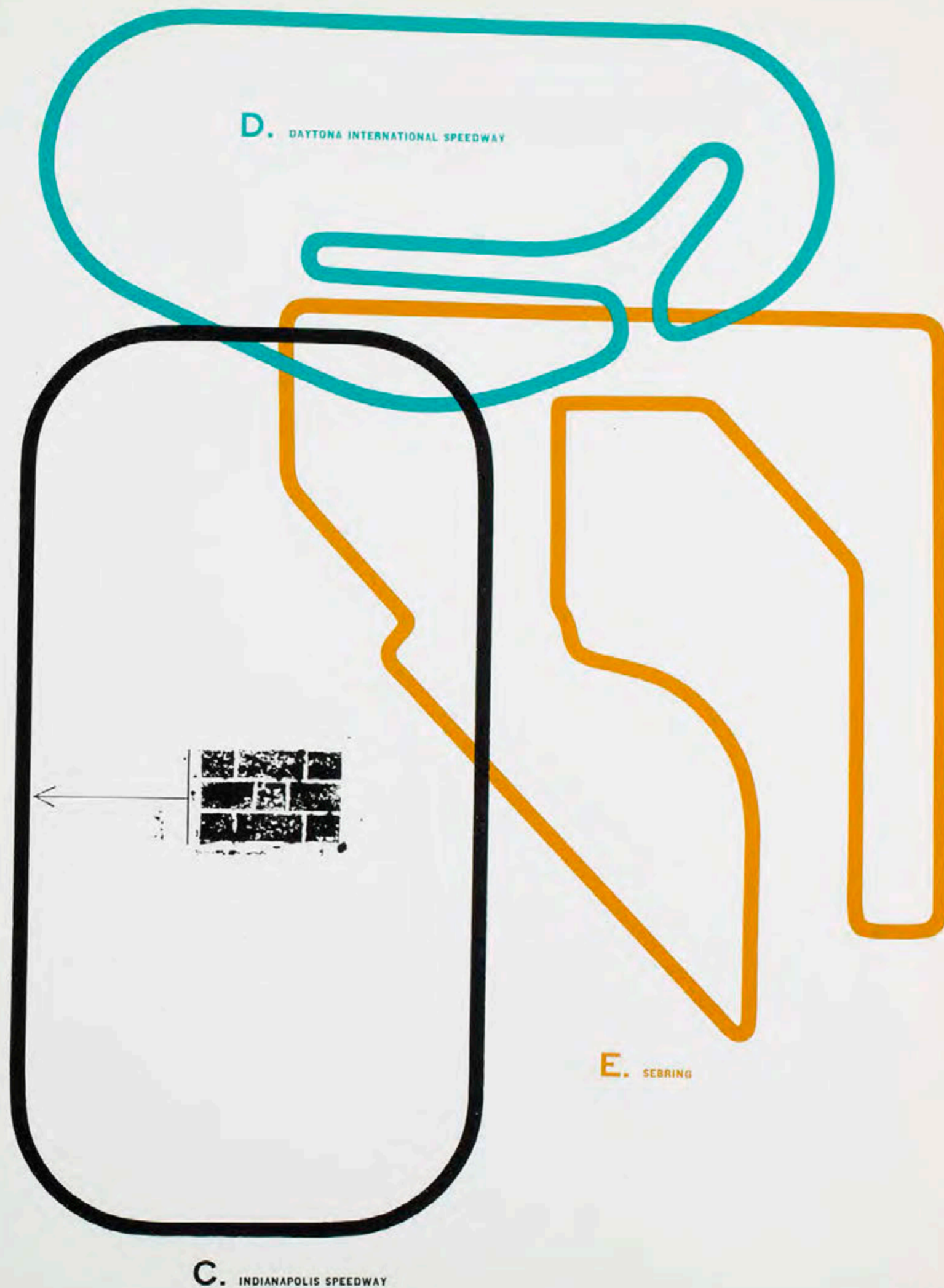
A more recent addition to America's list of famous tracks is the Daytona International Speedway in Daytona, Florida. The first dirt in the construction of this sunny beauty was moved in 1958, and the track was opened for racing in early '59. Graced by a 45-acre lake (Lake Lloyd) in the infield, the 2.5-mile speed circuit sports five infield tracks which lend themselves to motorcycle and other car events.

Known to be one of the world's fastest speedways, Daytona is completely equipped to handle any sort of emergency. The minimum width at any point along the circuit is 50 feet. A long pit road leads off the oval to provide maximum safety for both drivers and mechanics. A hospital is located near the garage to handle any scrapes and bruises suffered in the race. In addition, spectators are safely seated in grandstand and bleacher areas on the north side of the track. As Daytona can verify, America hasn't only made progress in the record book; safety and comfort are also prime considerations.

Of the hundreds of automobile races run in the United States this year, only three are recognized by the FIA as events carrying International Manufacturers' Championship points in GT Classes II and III. One of these events is run at what was once a Florida airport . . . now known as Sebring.

Sebring, a small city (pop. under 10,000) tucked away in south-central Florida, seems hardly the place to hold such international importance in the racing world. And yet, each year, some of the finest names in racing appear on this rather prosaic 5.2-mile course. Flat and desolate, with poorly defined corners, Sebring possesses all the drawbacks of an airfield circuit. Yet, past racing performances range from the exciting to some of the world's greatest. It has also proven itself as one of the safest courses in existence. Playing host to the Twelve-Hour Grand Prix of Endurance for the Amoco Trophy and the Grand Prix of the United States can be a risky business for any track. Sebring, however, has had only four fatalities up to 1961. A good record even for the best.

Of course, there are many other notable tracks and speedways in America—Riverside, the Continental Divide Raceways and Marlboro, to mention a few. Each has its good features and its bad, but all point to one important fact. America is well on her way to becoming a racing nation among racing nations. Not since automobiles hit the first tracks in the U.S. has it enjoyed the stature which it holds today. Americans are seldom second in anything, and the phenomenal rise in our network of automobile racing tracks seems to indicate that we're going out to capture our share of the glory of speed.



CORVETTE CLUB DIRECTORY

ANYTHING NEW AT YOUR CLUB? THE EDITORS OF THE CORVETTE NEWS WOULD LIKE TO HAVE INFORMATION AND PICTURES OF YOUR NEWSWORTHY CLUB EVENTS. PLEASE SEND THIS DATA TO CORVETTE NEWS, 205 GENERAL MOTORS BUILDING, DETROIT 2, MICHIGAN



THE SYMBOL SHOWN ABOVE IS USED THROUGHOUT THE CORVETTE CLUB DIRECTORY TO DESIGNATE CORVETTE CLUBS BELONGING TO THE NATIONAL COUNCIL.

Information included in this roster was up to date at the time of printing. When your club elects new officers or changes its address, it would be appreciated if this information were forwarded to the Corvette News.



ARIZONA

Sahuaro Corvette Assn. of Tucson
Dorothy Seidel, Secretary
Rt. 9, Box 847
Tucson, Arizona


CALIFORNIA

Coureur d' Corvette
Daryl R. Boomer
2038 W. Willow Avenue
Anaheim, California

Corvettes Limited

 Ronald M. Chazan
824 South Burnside Avenue
Los Angeles 36, California

Corvettes of Southern California

 Frederick T. Von Seeth
1031 Avenue B
Redondo Beach, California

Corvette Owners Club of North Hollywood

Eve Malsberger, Corres. Secretary
5942 Tujunga Ave.
North Hollywood, California

Northern California Corvette Association

Ron Craven, President
c/o Marie Hoy, Secretary
530 Canal St., Apt. 4A
San Rafael, California

Corvette Club of Pasadena

Julie Tappenbeck, Secretary
3445 Perlita Avenue
Los Angeles 39, California

Corvette Owners Club of San Diego

B. C. Perkins, President
14056 Halper Road
Poway, California

San Bernardino Corvette Association

Mrs. Jeanine Smith, Secretary
808 N. F St.
San Bernardino, California

Sempviren's Corvette Club

c/o Mrs. Gloria Ghera, Secretary
865 8th St.
Arcata, California

Valley Vettes

Tom Hamlin, President
14116 Valerio
Van Nuys, California

Corvette Super Sports

John Knowland, President
c/o Don Steves Chevrolet
401 West Whittier Blvd.
La Habra, California

Camino Corvettes


Terry McHenry, President
438 Montclair Drive
Santa Clara, California

All-Star Corvettes

Hagop Youkoudjian, President
P. O. Box 74636
Los Angeles, California

COLORADO

Corvette Club of Colorado

 Evelyn A. Dunshee
1470 S. Eliot
Denver 19, Colorado

Continental Corvette Association

Gary L. Faye, President
1200 Pearl St., Apt. 108
Denver, Colorado

CONNECTICUT

Thames Valley Motor Sports Club

Edward R. Eberle, President
P. O. Box 227
New London, Connecticut

Western Connecticut Corvette Club

Nelson P. Hart, President
Mrs. Georgina Hendrick, Secretary
Waterbury Road
Prospect, Conn.

The Connecticut Corvettes

Miss Ann Stamm, Secretary
27 Pleasant Street
Middleton, Conn.

DELAWARE

Northern Delaware Corvette Club

Walter D. Marvel, President
17 Franklin Ave.
Claymont, Delaware

DISTRICT OF COLUMBIA

Corvette Club of America

Mrs. Ruth Shenton,
Corres. Secretary
Box 5846
Washington 14, D.C.

FLORIDA

Corvette Club of Miami, Inc.

John A. Gintoli, President
620 N. W. 62nd St.
Miami, Florida

Corvette Club of Central Florida

John H. Powell, Jr., President
1539 Normandy Way
Leesburg, Florida

GEORGIA

Atlanta Corvette Club

James R. Wilson, President
3986 Ashford Dunwoody Rd.
Atlanta 19, Georgia

Corvettes of Macon

Jack Thomas, President
6474 Hawkinsville Rd.
Macon, Georgia

IDAHO

Idaho Corvette Association


Don Dillard, President
1114 North Seventh St.
Boise, Idaho

ILLINOIS

Chain-O-Lakes Corvette Club

Dick Kerr, President
913 Woodland Terrace
Grandwood Park
Gurnee, Illinois


Chicago Corvette Club

 William Burda, President
234 South Prospect
Clarendon Hills, Illinois

North Shore Corvette Club

H. Vaughn Ryan, President
3607 Hillside Rd.
Evanston, Illinois

Mid-West Corvettes

 Robert C. Crane, President
c/o Lloyd A. Coopmans, Secretary
2125 16th Street
Moline, Illinois

Corvettes of Peoria

Bill Bambrick, President
519 W. Lawndale
Peoria, Illinois

Corvette Clique


Miss Susan Soukup, Secretary
64 Rose Place
Clarendon Hills, Illinois

INDIANA

Calumet Corvette Club

Mike Sekulich
J. B. Shaver Motors, Inc.
3600 Broadway
Gary, Indiana

Michiana Corvette Club

 Carl Long, President
1630 S. Twyckenham Dr.
South Bend 14, Indiana

Tri-State Corvette Club

John E. Whalen, President
112 W. Louisiana Street
Evansville, Indiana