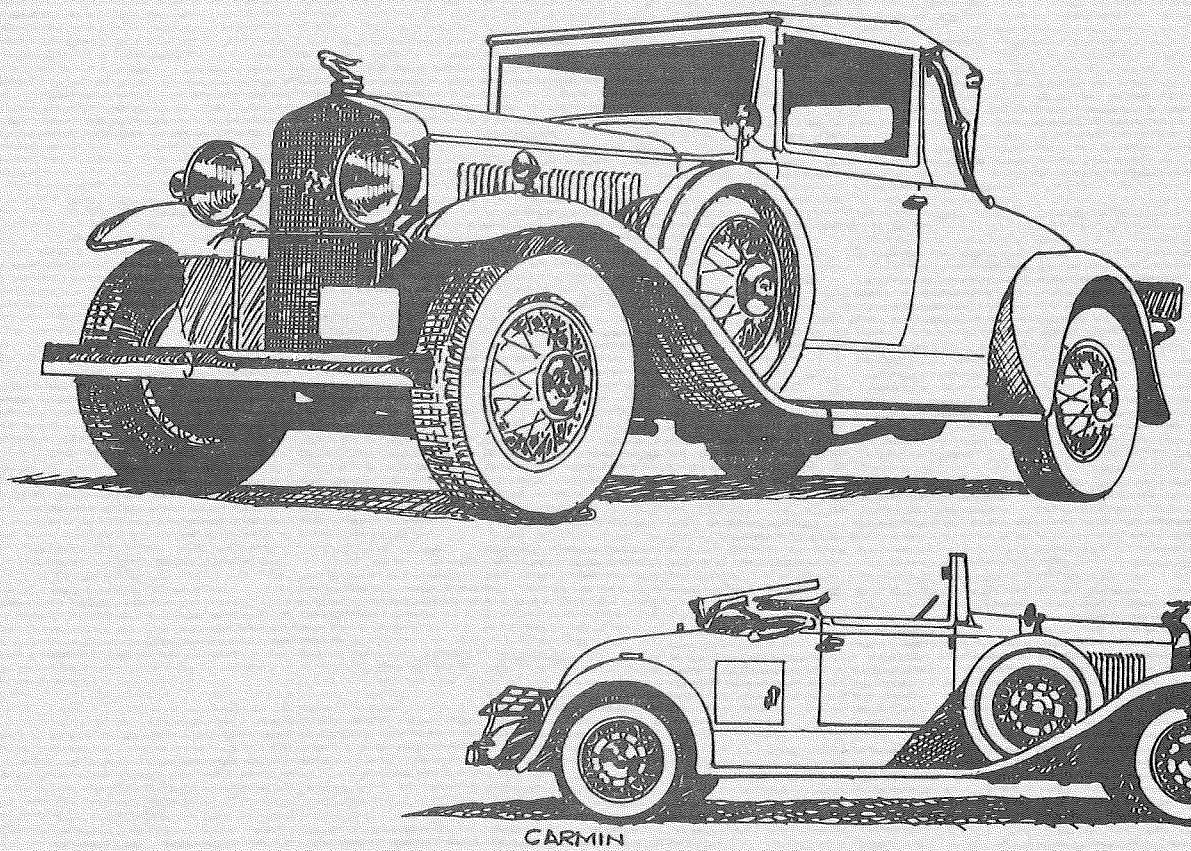
THE BUMPER GUARDIAN

FALL 75 – WINTER 76



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EDITOR ..... Bernard A. Carmin
REGIONAL EDITOR ..... Alan W. McEwan
ART EDITOR ..... Bernard A. Carmin

The Pacific Northwest Region was chartered by the Classic Car Club of America in 1963. It is composed of Washington, Oregon, Idaho and British Columbia, Canada.

The Classic Car Club of America is a non-profit organization incorporated under the laws of the State of New York. The Club seeks to further the restoration and preservation of distinctive motor cars produced in the period from 1925 through 1942, to provide a channel of communication for those interested in such cars, and to bring together in good fellowship all who own or admire these finest examples of automotive craftsmanship. The sole requirement for membership is a demonstrable interest in a Classic Car or Cars. Application for membership should be sent to John C. Dennis, Membership Chairman, Pacific Northwest Region, P. O. Box 171 Mercer Island, Washington 98040. National dues are $13 for Active Members and $15 for Affiliate Members, Associate Membership dues, limited to the spouse of an Active Member, are $2. Regional dues are $7.50 annually.

ITEMS FROM LA SALLE LOG
J. Edward Mc Dermott M.D.

October 10, 1972: The Drive Home
Picked up our "new" 1931 rumble seat convertible. Car ran great. Drove along Lake Washington shore singing the only old song I could think of -- Moonlight Bay. Mary, age two, was fascinated at the living radio. I worried about the car all night, alone in the cold.

November 7, 1972: LaSalle debut with the Classic Car Club. DISASTER!! While sitting through dinner and the annual meeting five gallons of gas ran over the parking lot. Al McEwan offered suggestions and Sig Linke solved with a hammer. We drove home praying and totally humiliated.

April 21, 1973: Went for a long drive. First mishap!! Mary, age three, was entertaining by singing into the cigar lighter which is connected by wire to the dash. Burned her nose; we still can't believe the lighter worked after forty years.

September 17, 1973: Lost gas cap to LaSalle on road between Eastsound and Rosario (7 mi.) Two hours later Gail found same resting on a rock exactly where Sig Linke calculated it would have fallen off.

July 1974: Caravan - Harrison to Vancouver
Gail and the newborn twins followed in the back-up car. Mary, age four, and Mark, age two, drove with me in the LaSalle, eating raisins. Raisins were observed entering the upholstery, instruments and clothing. The children laughed when the LaSalle took fever and "spewed out". Made Vancouver one hour late thanks to rescue truck, 15 gallons of water -- 3 boxes of raisins!

FROM 1927 LA SALLE TO 1975 SEVILLE

By J. Edward McDermott, M.D.

(Reprinted from Medical Tribune, May 28, 1975)

The recent introduction of a small car by Cadillac has generated much speculation about the European influence in American automobile design. The leadership role of this marque can hardly be ignored. Although the "introduction" of rear fender fins may come to mind, Cadillac should perhaps be remembered for such firsts as: the self-starter, the V-8 engine, center point steering, the automatic transmission, and, most important, standardization of parts.

1927 -- THE LaSALLE

Remember Cadillac's last new car? In 1927, people had accepted owning a car and were just beginning to think of owning two. Not only were women starting to drive, but men of affluence were beginning to drive their own car. The automobile was being widely used for social outings as well as business. Enter the LaSalle. Introduced as a "companion to Cadillac," the LaSalle was almost a direct copy of the most advanced European car of the day, the Hispano-Suiza. Sound familiar?

1975 -- THE SEVILLE

Today, faced with fuel shortages, overcrowded highways, and a trend to smaller cars, Cadillac's top executives became concerned that, to use the marketing expression, "the think leaders"--i.e., doctors, lawyers, and assorted "influentials" -- were turning to foreign luxury cars. So after months of speculation about a new LaSalle, Cadillac has introduced the Seville. No attempt has been made to conceal the Mercedes influence in its design. The Seville is truly a European sports sedan, small, light, maneuverable, and luxurious.

The Seville, like the LaSalle of 1927, is lighter, more sporty, easier to drive, but not cheaper. I stress "not cheaper" because after the Depression hit, the LaSalle was cheapened and is, therefore, often remembered as a 'cheaper Cadillac.' This is the reason given by some for not using the LaSalle name again for the new small car.

Like the new Seville, the LaSalle featured a lightweight, fuel saving, and slightly smaller V8 engine. It lacked some of the old Cadillac features, such as boot scrapers on the running board at each door. However, discarding such flourishes helped to lighten the car and enhance its sports car appearance.

PRICE FOR 4 CHEVY'S

The comparison goes beyond the cars themselves. In 1927 the LaSalle cost $2,600, which was about the price of four Chevrolets. This compares with the introductory price of the new Seville of $11,000, or the price of four 1975 Chevy's.

Despite the current recession, the public response is expected to be favorable to a European sport car from Cadillac, but it will probably never take the place of the LaSalle in a lot of memories. In Archie Bunker's words, "Gee, didn't the old LaSalle run great! Those were the days!"

CADILLAC'S SECOND SIXTEEN

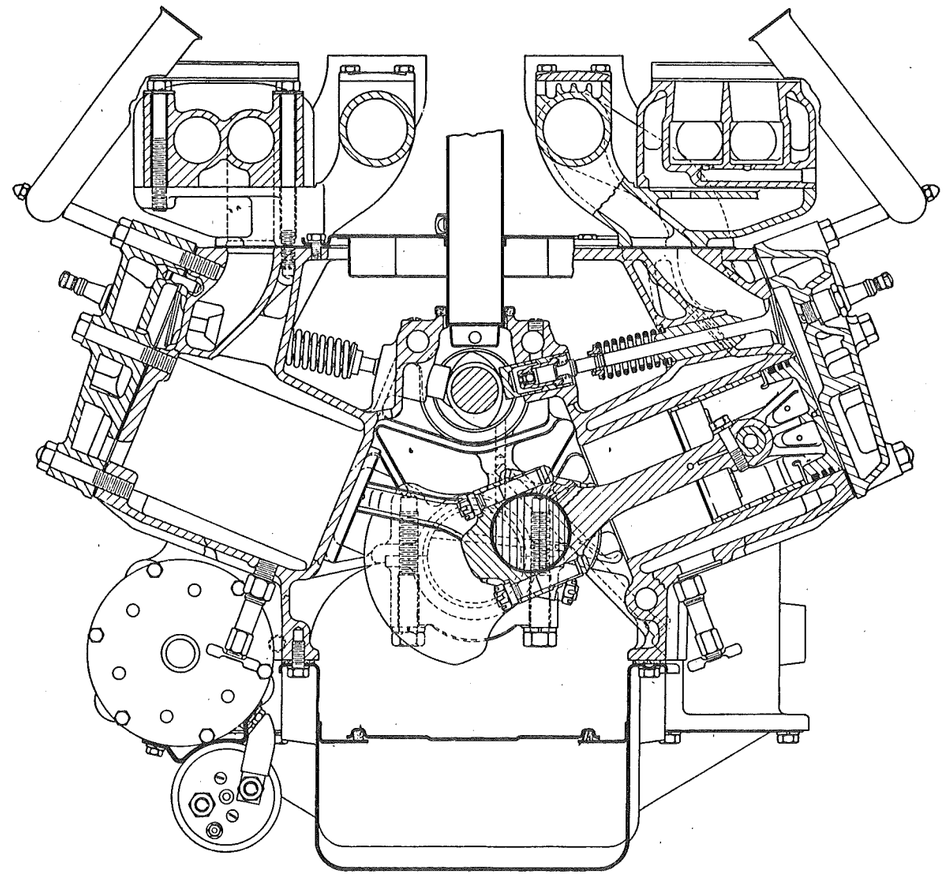
By T. M. Barber

The depression that followed the 1929 stock market crash was devastating to the automotive industry, particularly the luxury car field. Through the first three or four years the top-line manufacturers reacted with the typical market-place tactic of fiercer competition for a smaller piece of pie. Their products were improved, and luxury cars became more attractive in both styling and engineering, resulting in the very cream of the Classic era. In this elite company, Cadillac chose to emphasize engineering. They had followed the 1929 J Duesenberg into the "super-engine" field with the 1930 V-16, and it was an immediate success. The depression had not yet affected luxury car sales, and it is well Cadillac didn't delay, for over half of the total eventual sales of 16 cylinder cars took place in 1930. Later the same year Cadillac added the very similar V-12, which was also a success, probably taking some sales from the 16. By 1932, as the depression really cut into luxury car sales, all the American luxury car makers who were to survive (and some who weren't) were committed to the "super-engine" concept.

Cadillac 16-Cylinder 185-Hp. Engine

Transverse Section

Both cylinder banks and the major part of the crankcase are in a single casting. Water jackets extend the full length of the cylinder bores. Connecting rods are unusually short, because of the short stroke, and this makes the whole engine very compact. Note the large overlap on the main journals and crankpins in the transverse section. The crankshaft is supported in nine bearings, and two connecting rods have bearings on one crankpin side by side. All oil passages are drilled in the block and the pressure oiling system extends to the camshaft bearings. Piston pins are clamped in the connecting-rod small ends and have their bearings in the piston bosses. A rubber-type vibration damper is mounted on the forward end of the crankshaft, and this and the fan and generator drive by double V belts and a friction roller mechanism are clearly shown in the sectional view of the front end on the back page. An advantage of the large angle of V is that it permits of mounting most of the accessories on top or in the V, where with modern types of front ends of cars they are more accessible than at the sides of a narrow V engine. Another feature of this engine is that practically all accessories are in duplicate. Two dual downdraft carburetors are fitted.



However, as the depression grew yet deeper, these builders also introduced medium and even low-priced lines. Packard's 120 of 1935 and 110 of 1937, and Lincoln's 1936 Zephyr were particularly successful. Cadillac had already downgraded the LaSalle in 1934, from its original position at the lower end of the high-priced field to the middle of the medium-priced field; giving it an Oldsmobile-derived straight eight, and new styling which set the standard for GM in the mid-thirties. Cadillac's own styling was also standardized, so that by 1936 Cadillac shared body shells with other GM lines, to reduce costs.

Mechanically, however, Cadillac remained diverse. Its choice of engines in 1936 was greater than at any time in its history. There was a 247 cubic inch straight eight for the LaSalle, a 322 cubic inch V-8 for the Cadillac 60, a 346 cubic inch V-8 for the Cadillac 70 and 75, the V-12 for the 80 and 85, and the V-16 for the series 90. Such diversity, of course, was expensive, and also the straight eight LaSalle was not selling as well as its competitors, the Zephyr and the Packard 120. Furthermore, the costly and complex V-12's and 16's accounted for less than four percent of the Cadillac division's sales. Two major responses were made to this situation. First, in 1937, the LaSalle was upgraded and given the smaller V-8. The larger of these two engines, virtually identical except for cylinder bore, was used in all V-8 Cadillacs. LaSalle sales soared, aided by the economic recovery of 1937.

Cadillac's response at the top end of their line was unique in the history of the Classic "super-engines". They had two reasonably obvious courses: to keep either the 12 or the 16, without appreciable change, as their prestige line (as Packard and Lincoln did with their big 12's) or they could have become the first of the still viable manufacturers to abandon the "super-engine" field altogether. Instead, Cadillac designed and produced, for 1938, an entirely new V-16.

E. W. Seaholm, then Chief Engineer of Cadillac, stated the design goals of this engine as follows: (Parenthetical comments by T.M.B.)

1. The engine should have more than eight cylinders, and should develop as much power as the current sixteen. (By then the Cadillac V-8 developed almost as much power as the V-12, and being almost 300 pounds lighter produced an almost identical power to weight ratio. The prestige line must be made clearly better than the V-8.)

2. It should be reduced in length as compared with either the current twelve or sixteen. (At the time, the V-12 shared chassis and body styles with the larger V-8. The plan was to do this with the new sixteen and also the series 75.)

3. It should be lighter in weight than either the twelve or sixteen. (This would make it more feasible to share the V-8 chassis, as well as improving the power-to-weight ratio.)

4. The engine should be more economical to produce than the current sixteen, and should be simple to service. (Cost-savings in manufacture was paramount here, but was passed on to the customer both in about $2,000 lower list prices and in reduced maintenance costs.)

5. In addition to the above special requirements, the engine must, of course, meet the high standard of performance and serviceability required of high-priced automobiles. (It was, after all, to power the top-of-the-line model.)

In his excellent article in Automotive Industries in November 1937, Mr. Seaholm says that the engineers decided the new engine was to have sixteen cylinders primarily because of greater inherent smoothness. It would, he stressed, also give increased durability over a twelve of the same displacement, because a shorter stroke could be used, giving the sixteen less piston travel. This all seems to go against the idea that the new engine should be cheaper to build, but Seaholm felt sure that a sixteen could be built more simply than either the old sixteen or the twelve, and he was subsequently justified.

Other factors probably influenced the decision. Cadillac had powered their top-of-the-line car with a sixteen since 1930, and to back off from this would have been to lose prestige, face, and maybe customers. There were also engineering, geometric and styling factors involved to be discussed below, which made it difficult to design a twelve for the intended purposes.

Having decided on sixteen cylinders, the next decision was the angle between the cylinder blocks. Here V-12's and V-16's have an inherent advantage over smaller V-type engines. A V-8 designed as two fours on a common crankshaft has a built-in vibration problem. Cadillac had solved this, and had used a special firing order and a counterbalanced 90° crankshaft on all their V-8's since 1924. A V-12, on the other hand, can be designed as two balanced in-line sixes on a common crankshaft and will run smoothly, with any reasonable angle between blocks, as long as two cylinders do not fire together or too close to simultaneously. Angles of from 45° to 75° were used on Classic V-12's, including the equal-interval angle of 60°. Likewise, a V-16 can be considered as two independent balanced straight eights on a common crankshaft. In practice, though, sixteens use either 45° or 135° block angles because these give uniformly spaced power impulses. Although uniform spacing is not critical on V-12's or V-16's at moderate speeds, at very low rpm it can cause a slight unevenness in applied torque, and at high speeds, a slight vibration. These can be eliminated by proper flywheel and vibration damper design, but it is better to keep them out by using the equal interval angle.

The earlier Cadillac V-16 had a 45° angle between blocks. This was well suited to its overhead-valve design, with updraft carburetors and manifolds on the outside of the V and also fitted well under the high, narrow hood of an early thirties car. Servicing accessibility was good, too, since the hood opened from the side and fenders were narrow As the thirties went on, the fenders became wider and the hood grew longer, and in 1938 it opened from the front. The complex overhead-valve mechanism achieved no more power per cubic inch than a well-designed, inherently simpler, L-head. Thus the reasons for retaining the narrow angle V and overhead valves fell away, and the 135° L-head design was adopted. The design finally chosen was one with equal bore and stroke (3.25

inches), 431 cubic inch displacement, and a rigid nine-bearing crankshaft (the older engine has only five), as the best compromise for compactness, low piston speed (for durability) and simplicity. Carburetors and manifolds were mounted in the wide V for easy servicing. This also provided good cooling of the exhaust manifolds, a problem with V-type L-head engines. Since intake and exhaust valves are on the same side of the cylinder, the shortest route away from the block places intake and exhaust manifolds side-by-side. The close proximity of the hot exhaust manifolds with the carburetor and fuel lines, further hemmed in by the cylinders on both sides, can cause vapor lock and other problems. The Ford expedient of routing exhaust gasses between cylinders to exhaust manifolds on the outside of the V was disliked by Cadillac engineers since it created heating problems in the block.

These heating problems are involved in another compelling reason why Cadillac did not use a simplified L-head V-12 for their new engine. The 90^{o} V of a V-8, with both manifolds in the middle and four cylinders on each side, can get very warm. But the 60^{o} V of a V-12, with both manifolds in the middle and six cylinders on either side, is likely to be warmer yet. Why not use a wider angle for the twelve's V? As stated above, the V-16 block angles for evenly spaced power impulses at every 45^{o} of crankshaft rotation are 45^{o} and 135^{o} ($=3 \times 45^{o}$). (A 90^{o} angle would make the cylinders fire together in pairs, and so be no smoother than at eight.) For the V-12, the power impulses should be at 60^{o} for equal intervals. Other than the obvious 60^{o}, the only other usable block angle would be $3 \times 60^{o} = 180^{o}$. ($120^{o}$ would fire in pairs and so be no smoother than a six.)

But 180^{o} would mean a horizontally opposed engine, more difficult to fit into the allotted space between the wheel wells than the 135^{o} V-16. Not only would the cylinder blocks be lower and more widely spread, but also the stroke would probably have to be longer to achieve the same piston displacement. The V-12 180^{o}'s equal bore and stroke would be 3.58 x 3.58. If the stroke were kept at 3.25 (as in the 135^{o} V-16), the bore would be 3.75. If the stroke were shortened to 3.0 to give more side clearance, the bore would be 3.9. But both of these latter bores are beyond the 30's feasibility limits for medium-to-high speed L-head engines.

In such a horizontal layout (assuming the engine would fit at all) spark-plug accessibility would approach that of a more recent design which require raising the engine from its mounts to change plugs. This was perhaps considered impractical for a 1000 pound engine. Having reached this decision, Seaholm and his staff turned around 360^{o} and went back to the 135^{o} V-16.

The 1930 V-16 had a cast aluminum crankcase and separate cast-iron blocks. This construction was discarded in the new engine in favor of a single iron casting. Because of improvements in foundry techniques during the 30's, the enbloc casting proved to be lighter. The 1938 V-16 used hydraulic valve lifters (as did the earlier V-16), but of the type used in Cadillac V-8's from 1937-1948. The camshaft operated these lifters directly in the typical L-head manner from the center of the V.

All accessories normally requiring service or adjustment were mounted on the top of the engine. Cadillac engineers felt that mechanics who might be overwhelmed at the thought of servicing a sixteen cylinder engine would not object to two eights under the same hood. Hence the fuel, cooling and electrical systems for the two banks of cylinders were essentially separate. The two dual-downdraft carburetors on their separate manifolds were fed by two fuel pumps, which, however, were interconnected so that if one failed the other could supply both carburetors. The cooling system was likewise designed with two separate pumps providing coolant from a common radiator to each bank of cylinders. The electrical system had only one generator, driven by an ingenious friction drive, and one battery. But there were two coils, two distributors, and two sets of breaker points with both sets located in the left distributor to simplify timing synchronization of the two cylinder blocks. One set of points is connected to the primary circuit of the left-hand coil, which returns high voltage from its secondary to the rotor in the left distributor, and so to the left bank of spark plugs. The other set is in the primary circuit of the right-hand coil, which sends high voltage from its secondary to the rotor of the right-hand distributor and thence to the right-hand bank of spark plugs.

At the end of his article, Seaholm reviewed the goals set forth at first, and found that the new engine met them satisfactorily: (Comments by T.M.B.)

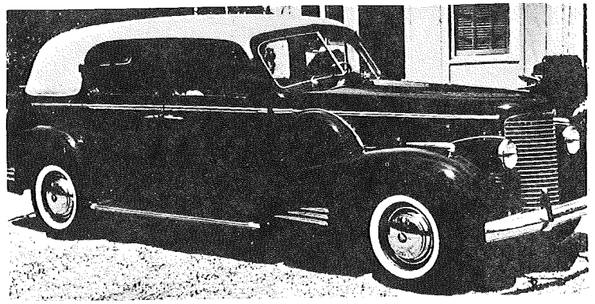
	Former 12	Former 16	New 16
1. Power	150 @ 3600	185 @ 3800	185 @ 3600
(hp @ rpm)	(in 1937)	(in 1937)	
(Displacement in cu. in.)	368	452	431
2. Compactness:			
less) (Length:	43"	51 5/8"	45 7/8"
access-) (Height:	30"	30"	18"
ories) (Width:	19"	19"	23 3/8"

(Though the new 16 was slightly longer than the 12, this was of little consequence since the newer 16 is so low that its rear cylinders fit under the toe boards. The height figure without accessories favors the newer 16 since nearly all of its accessories sit on top of it.)

3. Light weight:
   Former 12 - 1165 lbs.
   Former 16 - 1300 lbs.
   New 16 - 1050 lbs.
   (includes clutch and all accessories).

4. Simplicity: Total No. of parts
   Former 12 - 2810
   Former 16 - 3273
   New 16 - 1627

Although the 1938 V-16 did not have the elegant sculptured appearance of its 1930 counterpart, it fully met its intended goals. It was probably superior in smoothness and definitely superior in high-speed performance and general serviceability. But the era of the "super-engine" was drawing to a close (with the end of the Classic era not far behind), and after a total of about five hundred cars, Cadillac's second sixteen passed into history at the end of the 1940 model year.



1940 Cadillac V-16, Limousine, Fleetwood

References:
E. W. Seaholm, "The Evolution of the Cadillac Sixteen Engine", Automotive Industries, November 27, 1937. p.778-ff.

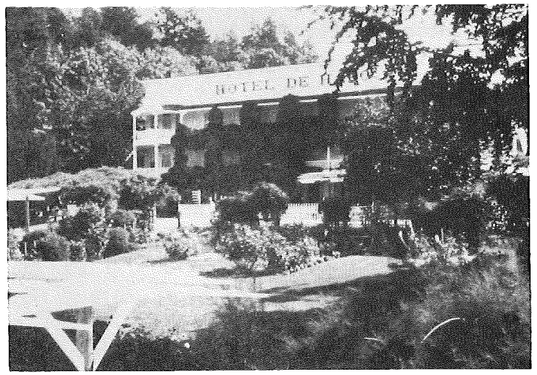
Maurice D. Hendry, Cadillac - The Complete Seventy-Year History. Automobile Quarterly Library Series Book, 1973.

SEPTEMBER ORCAS ISLAND MEET

By Alan W. McEwan

The Orcas Island Meet the weekend of September 12, 13 and 14 had to be one of the best - if not the best - Regional Meet in years. The perfect weather and beautiful environment combined with a very unique program of activities to produce a superb weekend.

Several Classics joined the caravan from Seattle to Anacortes and all arrived just in time to make the noon ferry. John McDermott, who had an operation to perform that morning, was reported to have been seen, still in a smock and scalpel in hand, running from Providence Hospital to a waiting Mercedes (non-Classic type). The driver, whose initials are G. McD., pointed the car north on I-5 in an attempt to reach Anacortes in time to join the rest of the gang on the noon boat. (Our reporter says that John spent the entire trip on the rear floor, afraid to look up.) Just as the ferry was pulling out, John and Gail ran aboard, having abandoned the Mercedes in the parking lot. As the boat sailed away into the sunshine, someone's radio was apparently picking up a news report

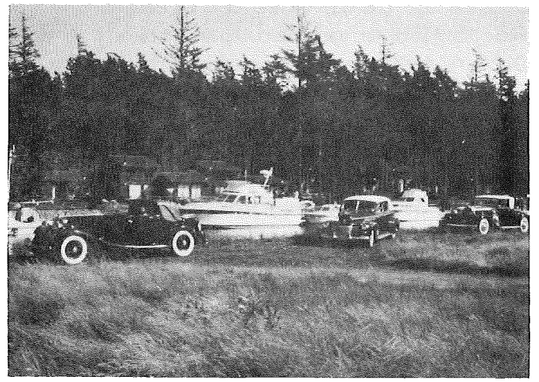


of the State Patrol's efforts to locate what was thought to be a low-flying, light gray Cessna (?) in the vicinity of I-5.

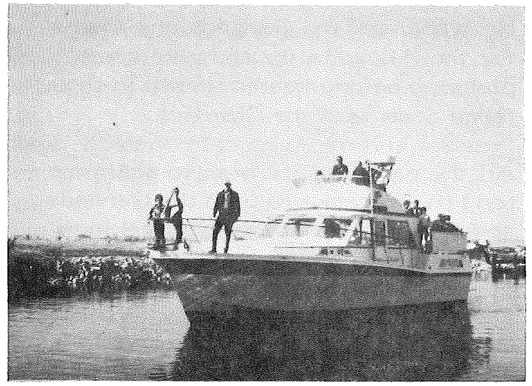
The Club had reserved all the accommodations at Bartel's resort on the north end of the Island. This worked out very well, as it provided a nice, close-knit, casual atmosphere. The official activities started Friday evening at Don and Arlene Gerard's beach home. Again they put on a salmon barbecue second to none and fed about fifty people. However, there was one catch! Before dinner, Don needed help to place a big, newly-acquired totem pole in a vertical position. Obviously, anyone who drives (restores?) a Classic must be an expert totem pole erector and the job was attacked with vigor. Although it looked more like a Keystone Cop comedy, the totem pole did get placed in the ground.

Saturday morning brothers Bloom and McDermott took all the kids fishing in a private lake. Several awards were given to the fishermen (fisherpersons?) for their catches. Fortunately, the Club wasn't depending on the catch for the Saturday evening dinner.

Just before noon the Classics all left for a "race" up Mt. Constitution. It was to prove once and for all that it is nearly impossible to safely climb that mountain in high gear. But, the perpetual Rolls-Royce/Packard competition was evident and again the Rolls-Royce clearly demonstrated its superiority. For a detailed analysis of the performance exhibited by the leader of the Packard contingent, a 1937 V-12, it is suggested that direct inquiries be made to the car's owner, D. Gerard, as to the highly experienced imported Packard driver (Norm Herstein) engaged to drive the machine. Following the visit to Mt. Constitution, everyone motored over to Gerard's for lunch, where the balance of the food remaining from the night before was consumed.



At 3:00 PM Saturday the whole contingent went cruising. Captains Aker and Gerard had their big Uniflite cruisers moored nearby and a total of about 50 people climbed aboard for a 2-1/2 hour cruise around Orcas, Matia and Sucia Islands. This was a high point for everyone and demonstrated what luxurious boating in the San Juan Islands is all about.



The Saturday evening function began with a cocktail party on the beach patio at Bartel's and was followed by a good old-fashioned crab feed. There was all the salad and fresh crab you could eat.

Reservations for the whole group had been made in advance for breakfast at Roche Harbor on San Juan Island. At 9:00 AM the two cruisers pulled away from the dock for the 1-hour trip to Roche. Again, the weather was perfect, as it had been all weekend. The restaurant at Roche puts on a fantastic, Snoqualmie Falls-type breakfast, and had our special room ready when the group arrived. There has been a lot of improvement made in Roche Harbor during the past few years and it is a very enjoyable spot to visit. (The Club is investigating the possibilities of a meet next September at Roche Harbor.)

After breakfast everyone had about one hour to explore the area before the boats set off for a leisurely cruise around more islands and back to Orcas. We watched commercial fishermen pulling in their catches, stopped to visit the State Park on Stuart Island, and just generally enjoyed everything and everybody. Both boats pulled into the moorage near Bartel's about 3:00 PM, giving us plenty of time to thank the Gerards and Akers for their hospitality and take some pictures before heading down to the ferry dock with the Classics.

All the participants wish to again extend their thanks to both the Gerards and Akers for their part in making this weekend so very special for everyone. There is no doubt that all participants will be back for next year's San Juan Meet.

TECHNICAL

THE DUPONT SYSTEM FOR AUTOMOTIVE REFINISHING

by Lauren K. Matley

(The first in a series of articles aimed at helping the restorer understand some of the technical aspects of automotive refinishing).

Basically, the series will follow standard refinish principals with emphasis on problems peculiar to the restoration of antique or vintage automobiles, yet afford those with any automobile up to, and including, current 1976 models, an insight to refinishing principals and techniques that can be translated into individual refinishing problems or needs.

As a background, let's go back to the late teens and review refinishing practices then in use by automobile manufacturers. Carriage finishing had remained much the same for centuries. That is, pigment ground in oil, applied over a sized surface with a flat camel hair brush, and varnished with several coats of meticulously applied Japan varnish. With the advent of the motor car and the extensive use of sheet metal, corrosion resistant primers, primer surfacers and sealers were added to this centuries-old art. This was then the system that greeted a fast-growing new industry, a task for which it was not prepared.

This painstakingly slow painting process caused a monumental bottleneck for automobile manufacturers as the demand for automobiles led to the assembly line manufacturing processes and painting of bodies could not keep pace as it took nearly thirty days to complete a paint job at the factory.

This created many problems -- for one, warehouses and body plants filled with car bodies in various stages of finish. As an example of the painstakingly slow painting processes that were literally strangling the industry, let's examine a typical paint system in use in the late teens and early twenties:

One coat of metal primer - dry time: 8 hours.
Two coats of primer surfacer - dry time: 8 hours each coat.
One coat of sealer - dry time: 48 hours.
Two coats of pigmented ground coat - dry time: 36 hours each coat.

As you can see, time was necessary in application of this system which was brushed on by hand, add to this, sanding, hairing off, color rubbing with oil and pumice, and varnish rubbing. Yet this produced a finish that would last less than two years before deterioration dictated refinishing.

Of course, fast drying colored varnishes were coming into their own about this time, but it was not until 1923 when DuPont developed a revolutionary finish called Duco Nitrocellulose Lacquer that automobile painting could match the speed of assembly line production.

Since that time paint has grown out of proportion and the state of the art is such that today's finishes are a miracle of color and durability unthinkable a few decades ago.

With this in mind, let's consider how the restorer can assure himself a finish on his automobile befitting the hours of blood, sweat and tears spent preparing it for that cocoon of rich, glossy paint. Preparation of the metal is paramount in securing a total paint system of durability. Therefore, rust removal by any means is first followed by mechanical or hand sanding with 80 grit aluminum oxide sandpaper. Next, and just prior to primer application, etch the metal with DuPont 5717-S metal conditioner reduced 2 to 1 with water. Scrub the metal with this solution using a stiff brush, steel wool or a 3-M scuff pad. While still wet, wipe dry with a clean cloth or towel. If the solution dries before it can be wiped dry, rewet and then wipe dry.

This process does two things: First it chemically neutralizes the rusting action which takes place even though not visible to the naked eye, then provides a thin phosphate coating that temporarily prevents the metal from corrosion as it is exposed to atmosphere. It is important that the now chemically clean metal be primed within hours to insure full corrosion control as the phosphate coating is only a very temporary protection.

Now comes the area where the most common mistake is made by amateur and professional alike -- the selection of the proper primer, or primer surfacer. The improper primer can, and does, compromise an otherwise superior finishing system.

There are many so-called rust proofing primers available such as fish oil based types or lacquer based types that fall short. In support of this statement let me point out that original equipment manufacturers never have and will most

likely never use these primer types in production of automobiles due to their long range performance deficiencies. Only alkyd and epoxy types are recognized as those having the best long-term performance characteristics demanded by today's finishes.

This is the key for selection of primer or primer surfacer types that are to be used when working with stripped, cleaned and etched bare metal -- NO EXCEPTIONS!!

Since original equipment primers and finishes are baked, air dry systems do not generally offer the same fidelity. However, the DuPont Corlar Epoxy Zinc Chromate Primer, 2129-S Sealer, and Lucite Acrylic Lacquer Topcoat System is AT LEAST equal to the original alkyd bake primer and thermal reflow topcoat systems used by General Motors over the years.

The Corlar system can be used as a primer or a primer surfacer depending on the film build. Secondary, but still a superior system would be the use of DuPont Preparakote Alkyd Primer Surfacer followed by a sealer designed for the top coat. Both primer systems will accept acrylic lacquer, acrylic enamel, alkyd enamel and polyurethane enamel top coats.

The only use for lacquer primer surfacer would be in the case of small areas of a primed automobile that have been sanded through to bare metal and require touch-up priming. In this instance use DuPont Multi-purpose Primer, #100-S, which is an acrylic based lacquer primer with corrosion control. These priming systems will accept glazing putty for small imperfections during the priming and block sanding procedures.

In block sanding primers, use of a guide coat of primer of a different color applied over your base primer will aid in blocking out surface irregularities and surface imperfections. Generally this is done on your final coat of primer or on your final block sanding procedure when finer grits of sandpaper are being used to produce that perfect base for top coating.

Conditions will dictate the use of a particular primer. For example, Corlar epoxy primer has limitations - such as temperature restrictions, induction time, reduction ratios relative to end use, and health hazards due to its zinc chromate pigmentation. Your DuPont Jobber can best define the priming system best suited to your needs.

Sound paint preparation practices, including the proper system, is like building a house on a rock foundation -- IT WILL STAND THE TEST OF TIME.

A GUIDE TO SANDING PROCEDURES

by Lauren K. Matley

Professional Refinishers are as divided on the subject of sanding procedures as they are on primer selection or top coat selection. Therefore, we will attempt to outline a system that will produce the type of finish restorers desire, even though our system may be lengthy or redundant by production shop standards. Then again, we aren't looking for a typical production finish either. Basically, we want to use a step-by-step progression of grits in this operation in order to fill the bare metal, produce a level, sandscratch-free finish, and yet remove primer rapidly. Most steps require the use of a 3" x 4" sponge sanding pad, as sanding with the bare hand produces uneven sanding pressure causing finger grooves, or ripples, to appear in the topcoat.

For the dry sanding operation, the use of zinc stearated, frecut, or no-fill, paper is recommended to lessen the chance of paper clogging and gouging the primer.

Another rule is to sand in a straight line. It is significant that wet sanding is always superior to dry sanding. Water acts as a lubricant and disposal system for the material being cut, thereby keeping the paper clean and sharp insuring better cutting action. Wet sanding, however, is always part of the final sanding procedures and does not lend itself to the coarse filling and blocking procedures at the outset.

Since we are working with stripped, bare, or sandblasted metal, our first sanding step could be done mechanically with a dual action air sander, using 150 grit discs. However, we will assume all the sanding steps will be done by hand.

Dry sanding requires a sponge sanding block and a supply of dust particle masks, such as the 3M #6985 masks. The standard 9 x 11 paper should be torn into two 4-1/2 x 11 sheets and folded over your sanding block. In the areas where a block cannot be effectively used, keep your fingers close together to lessen the chance of grooving the primer.

The initial sanding requires #180-3M trimite frecut paper, or equivalent. Thoroughly sand the car with little concern for sanding through to bare metal in spots. Follow with a solvent wash such as DuPont 3832-S to remove all traces of sanding dust. Re-prime with two coats of primer. After sufficient drying time, block sand again with #240 grit 3M trimite frecut paper, or equivalent. Occasionally slap the paper and block with your hand to remove caked primer from the grit. Again, solvent wash after sanding to remove sanding dust completely. Re-prime with two coats of primer.

At this point, large flat surfaces are given special attention. In this step, #320 grit trimite frecut paper is torn into 4-1/2 x 11 sheets, wrapped around a wooden paint paddle and the surfaces sanded with an oblique cross cutting action that will produce a properly blocked surface. Finish the remainder of the car with #320 grit trimite frecut paper and your sponge block as in previous steps. Finish with a solvent wash.

Now we are ready for the final steps. First, re-prime with one coat of primer. Next, guide coat using primer of a different color as not to completely hide the preceding coat of primer. (If dark gray or oxide red primer was used, guide coat with light gray, etc.) This step, wet block sanding, will allow only enough material removal to obtain a level, smooth surface, yet expose any surface imperfections or low spots that need further blocking or, in some cases, spot priming and re-blocking.

With your sanding block and #360 grit wet or dry waterproof paper and a large sponge, sand, flowing water from the sponge above the work. Use the water generously during this operation - a trickling hose can substitute for a sponge if the weather or work area allows. Always remove any sanding sludge

as dried sludge is often difficult to remove. As you sand through the guide coat, use a small 2" x 3" rubber squeegee to wipe the work area dry for a visual check of your progress. During this operation, lacquer spot putty may be used to fill small surface imperfections such as rust pitts, nicks and gouges. Never use spot putty to fill a large low area over 2 to 4 mils thick.

After this step, some spot priming or putty blocking will be required to put the final touch on your work. This is the final step in sanding that provides that perfect base on which to apply your favorite topcoat.

NOTICE

It is with great regret that we announce the death of Jim Miller, one of the Region's long-time members. Jim had been an old-car hobbyist for many years and had owned a number of cars and vintage boats. In spite of physical handicaps, he was active in several clubs, including CCCA, the Horseless Carriage Club, and the RROC.

We extend sincere condolences to his wife, Glenndonna, and his family.