



# LotusLines

January/February 1991

7th Year of the Club... 42nd Year of the Marque

## Chairman's Ramblings by John Daniels

Here it is, time for another newsletter. As usual I'm sitting down at the computer with absolutely no idea as to what I am going to ramble on about. Since this is my last newsletter as the chairman I am somewhat saddened by the idea. I will miss the enjoyment that this position has brought me over the last couple of years. I intend to stay very active with the club and offer my total support to our new leader whomever he/she may be. Nikki has offered to continue as the membership person and we both intend to continue offering trip and event opportunities. Some of the events I want to pursue for the club this year are: The annual EGLCC dash to the ocean in April, The annual hillclimb in Vancouver BC in May, The Metro specialty car show in June, The Overlake Shopping Mall car show, and perhaps some club support for the local Autocross events and a multi-club banquet at the General Petroleum Museum. I will also be offering my assistance to organizing the clubs participation in the Bellevue All British Meet and the Portland Meet. This seems like an appropriate place to stop and say thank you to the entire club for your support during the last couple of years and special thanks to Terry and Jim.

The December meeting was replaced by our Christmas party and hosted by Noel & Bobbie Keefer. As we have come to expect, they did a great job and everyone thoroughly enjoyed themselves. Thanks again Bobbie & Noel. Our next meeting is scheduled for Saturday, January 19th at Bayside Lotus in Seattle. Hopefully we will get some conclusive information concerning the Lotus sponsored car insurance. This meeting is also the one where you need to show up with your nominee for the chairmanship in tow as we will hold the election during the meeting. Please be sure that anyone you wish to nominate is in agreement and will be willing to take on the chair. The February meeting will be hosted by Bob & Shari Crichton on Sunday, February 17th. Well I guess this is the end of my rambling for now so I will say goodbye and thank you all.

## Lotus Insurance Update by Terry Elmore

In the last newsletter I wrote an article incorporating all the information I had to that point concerning the new Lotus insurance program being offered through Lotus Ltd., with the comment that to date nothing had appeared in their newsletter ReMarque on the subject. Well, just a few days after this was printed the October ReMarque arrived, with full details and application forms. I'm providing this to Jim, and hope he can include most, if not all of it, in this issue. I'm sure you'll agree that it's a major subject of concern to Lotus owners, especially with the mandatory insurance requirements we now have in this state. Please note again that you must be a member of Lotus Ltd. to obtain this coverage. If you do obtain coverage for your Lotus under this program, I could appreciate your letting us know of your experiences concerning acceptance of your stated valuation for your car and payment on claims should you wind up in that unfortunate position.

The Position of Fast Driving by Kiyoshi,  
reprinted from the Chapman Report,  
the Newsletter of the Golden Gate Lotus Club

The following series of articles are offered in preparation for the 1990 Lotus Convention Track Sessions on May 31st. These articles will cover the basics of car preparation and driving.

Talent, quick reactions, great vision, incredible dexterity, piercing concentration and stamina are the physical attributes of the modern racing driver. But, even a fast driver is nothing in poor machinery. Driving, especially high performance driving is more than bravery, it is the communication between driver and machine.

The operative concept is communication. But, cars don't talk, although many Lotus wives would argue otherwise... So, obviously this is a very different form of communication that takes place between driver and car.

The driver "talks" to the car with the controls; throttle, steering wheel, brake pedal, clutch. And the car replies to driver through visual inputs, shifts in acceleration, roll, dive, squat, steering feel, brake pedal resistance, sound, smell and to a degree taste. So, the argument is if one desires to drive quickly and with precision it follows that the better the lines of communication between driver and car, the greater precision the driver can drive. If the messages communicated between driver and car are garbled, then the outcome is garbled. Question: What can be done to enhance and insure complete and better communication between driver and car? Answer: LOTS!

First note how the car communicates to the driver... They are all sensory elements. Many of which are visual; roll angles, dive and squat, steering wheel turn angle (the amount the steering is turned as seen by the position of the spokes), etc. You have to be able to see out of the car in order to drive quickly. Your lines of sight should be unobstructed (nothing dangling from the mirrors, no deities mounted on the dash). Sit up, move the seat back, raise the seat, do what it takes to get your eyes into a position from where you can see what's going on. Fix your head position, this will keep the angles constant, enhancing your ability to judge depth which is directly related to timing. Too often I have seen folks attempting to drive fast with their heads leaning this way and that. Don't do it! How can you possibly judge distances if your head is in a different position every time you come to a given obstacle? The judgement of distance is a matter of coordination where the stereoscopic vision of your two eyes use the differing angles to perceive depth. Head movement therefore is detrimental to this skill. Hold your head upright and still!

Good head position is promoted by seat height and seat back inclination. Generally speaking for most performance driving get your seat so your head is as high as possible to see over the dash and front fenders/wheels. A little extra driver elevation goes a long way to enhance depth perception and offers little sacrifice to the height of the center of gravity.

Steering, here the car speaks to the driver with load and resistance. Too often power steering eliminates all the "feel" at the steering wheel.

Increasing cornering loads develop more "weight" at the steering wheel. Once the front tires have broken traction, the steering wheel goes "light". The driver must learn to understand this message so that he can "know" the limits of adhesion through this "feel" at the steering wheel.

I like a fatter rimmed steering wheel, one that can be comfortably gripped with no more than three spokes. I find that a smaller diameter wheel enhances comfort as well. You sacrifice mechanical leverage with a smaller wheel, but it does "quicken" the steering and response. You have to be smoother with your steering inputs with a smaller steering wheel because a smaller movement will correspond to the same result of a larger movement on a larger diameter wheel. On older Lotus cars, Elans and Europas I have found the 14" stock wheel to be unsatisfactory, preferring a 12 or 13 inch fatter rimmed one with a nearly flat dish. Additionally, I have lowered the steering wheel on all my Europa and Elans by placing spacers between the pillow block and the dash mount and loosening the pillow block rack mounts to allow the rack to pivot slightly.

The steering wheel should be slanted and a distance such that your arms have at least a 45 degree bend in them, but no more than 90 degrees when your hands are in the three and nine position. When turning the wheel, your arms should still have a slight bend in them when your hand is at the top of the wheel. The classic straight arm driving position is not only tiring, but is very brutal on the shoulders, besides, bent arms promote leverage.

Now to communicate with the car through the throttle, brake and clutch the motions must be smooth and progressive, no stomping or jamming. You should treat these pedals as if something were taped to the pedal faces. Transitional movements between the throttle, brake and clutch must be progressive and smooth. Abrupt movements and applications of any of these three controls will upset the balance of the car when at or near the limit.

Typically Lotus cars have rather light pedals. Even the brakes, unassisted are light and progressive due to the low curb weight of the car. Pedal positions are absolutely essential to fast, smooth driving. Let's begin with the brakes. The center pedal must not have too long of a throw. The length of the throw is controlled by the mechanical advantage and the amount of brake fluid required to activate the brakes. The proper setting is to have your leg slightly bent when the brakes are fully applied.

The throttle pedal keys off the fully applied brake pedal, the face of the throttle pedal at idle must be at or slightly further away than the plane of the fully applied brake pedal! The distance between the two pedals is extremely important. The right edge of the brake pedal must be within a hair of the width of the right sole shoe! This is a MUST! With this relative pedal arrangement the driver can fully apply the brakes without fouling the throttle pedal and then can "roll" his foot off the brake and onto the throttle. Conversely, as the driver releases the throttle he can "roll" his foot atop the brake and apply it while still coming off the throttle, effectively "left foot" braking. Having the two pedals close reduces the movement of the foot and keeps the foot in place during hard cornering maneuvers. If your right foot has a tendency of sliding off the right side of the throttle or the left side of the brake, then weld or rivet a short metal "fence" to hold the foot in place. Additionally mount a heel block below the

throttle and brake pedals. This again can be a STRONG metal fence upon which the heel of your right foot can pivot. The face of this again should match the plane of the fully applied brake pedal.


The clutch pedal must be an ample distance from the brake pedal to allow both feet to activate the clutch and brake simultaneously. Try to adjust your clutch so that the throw required is equal to the distance of the throw needed to fully apply the brakes. I again strongly suggest mounting or continuing the heel block to the clutch pedal.

There is one pedal we've forgotten... A fourth one! It controls nothing and as such is known as the "dead" pedal. It should be mounted to the left of the clutch pedal and available to the driver for bracing himself in hard corners. There is nothing more uncomfortable than having the driver's left foot flapping about the pedal box in the middle of a hard corner. The driver compensates by hanging onto the steering wheel and this does nothing to promote good steering.

None of what I've said so far does any good if the seat does not support the driver's body properly. It is impossible for a driver to manipulate the controls of a vehicle if his body is flopping about the cockpit. He must be pinned down to the seat as if he were part of the car. This does two things, first it allows the driver to use his limbs to manipulate the controls and not use them to hold himself in place, and secondly, by being firmly planted in place he can better "feel" the changes in acceleration, forward and back and side to side, of the car and then react accordingly. Therefore the driver's seat must supply ample side support at the legs, hips and back of the shoulders. There must be ample thigh support to keep the driver from sliding down and the overall fit should be snug.

Finally a GOOD safety harness should be firmly anchored to the chassis. This means a three inch lap belt with a crotch belt and two shoulder harness of at least two inches in width.

These are the basics... These must be handled before even the first wheel is turned and well before we even consider going out the garage door... Next time we'll discuss how to use those controls that are now set up for optimum use.

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## Camshafts Part Three - Lotus Twin Cam Variations by Dema Elgin

In previous articles, I covered a variety of topics related to the workings of the four-stroke, internal combustion engine. For Part One, I discussed a little about volumetric efficiency and how it is related to piston velocity, cylinder pressures and how they determine normal or abnormal combustion, pumping losses that occur on the compression stroke as well as the exhaust stroke, overlap period, lobe centers and how to establish camshaft duration in terms of crankshaft degrees. In Part Two, we went deeper into the four strokes by listing the order of importance of each stroke and how it affected engine performance. We talked about compression ratio versus intake valve closing, what RPM range one might choose for their individual application, some information about cylinder head flow and finally some ideas about camshaft decisions when the engine is known.

Let us now review some basic cylinder head that one must consider before selecting a camshaft. Most people will agree with the statement that larger valves are required for more power. But now we need to ask several questions. What happens to the volumetric flow rate (in cubic feet per minute or CFM) when valve sizes are increased? What about the port velocities (both intake and exhaust)? How are the exhaust flow and intake flow affected? Is BIGGER really BETTER? It has been my experience that when you are dealing with a stock cam, say 250 degree duration, it does indeed help to increase the valve sizes to get more flow through the engine. Some engines respond to increasing the exhaust flow so that it almost matches the intake flow. Based on valve diameters, you will find that the exhaust is about 80% of the intake in your typical engine. Design guidelines developed by the Society of Automotive Engineers (SAE) suggest that the exhaust diameter should be 75 to 80% of the intake. I prefer to be in the 80 to 85% range and port the head to achieve about 80% exhaust CFM flow compared to the intake CFM flow. When using a stock cam, you can get good results even at exhaust/intake ratios of 90 to 95%. Such high ratios will also work in drag racing applications where the engine is intended to operate at wide open throttle conditions. However, when a camshaft with more duration is installed in a "hot" street, autocross or road racing engine, a 90 to 95% exhaust/intake flow ratio will over scavenge the cylinder resulting in wasted fuel and an undesirable reduction in torque.

Now let's see how these comments have been translated into some popular Lotus Twin Cam street and racing motors. Valve sizes for various Twin Cam heads are summarized in the following table:

### TYPICAL LOTUS/FORD TWIN CAM VALVE SIZES (inches)

	<u>Intake</u>	<u>Exhaust</u>	<u>Ratio</u>
Standard Engine	1.53	1.32	86
Sprint	1.56	1.32	84
"Racing"	1.625	1.375	85
Brian Hart	1.69	1.44	85

Where the standard engine is an early Weber head and the Sprint is a late Stromberg head. Flow measurements of the Stromberg, Racing and Brian Hart heads are shown in Figures 1a thru 1c. The Stromberg head (Figure 1a) was "cleaned up" but not fully ported, and the flow curves show a high exhaust to intake flow up to a lift of 0.100". This flow ratio then levels off to about 80% for higher valve openings. Note that the intake flow doesn't increase

much past 0.400" lift, and the exhaust levels off at 0.400". The racing head (Figure 1b) is a Weber that has been prepared (supposedly), but you can see that it has a very poor flow ratio at low lifts where the exhaust flow actually EXCEEDS the intake flow! Things look better above 0.150" lift, and the intake flow is still good past 0.450" lift while the exhaust flow levels off at about 0.400". Finally, the Brian Hart head (Figure 1c) shows some really deep breathing capabilities! A lot more CFM overall and great intake flow up to 0.450" lift with the exhaust good to 0.400" of lift.

Now, most push rod and Twin Cam cylinder heads flow very well up to 0.350" lift, but flow increases really start to level out beyond that lift. The larger the valve the higher the CFM is what you normally expect, and you can see that the Twin Cam head will flow well even above 0.400" lift when it has been reworked by increasing the valve sizes, grinding, polishing and blending the valves and ports. The bottom line is clear: a well developed cylinder head on an engine will really pay off in increased horsepower. However, as I have said before, the individual making an engine modification has to be realistic about where he/she wants the power range.

Just about any engine would benefit from a prepared cylinder head, a good exhaust system (with a relatively small diameter for street use), and maybe a little larger carburetor. As you increase the RPM band you'll need to increase the compression and add some duration to the cam. The more duration that you add, the more compression you'll need, and that combination will increase the upper mid-range and top-end power. It is very important to keep your combination balanced; for example, you cannot use a 270 degree cam with 8 to 1 compression (9.5 would be a lot better) and conversely you cannot have 10 to 1 compression and use a cam with only 250 or 260 degrees of duration! As soon as the duration is above 270 degrees, the standard exhaust system will restrict the breathing ability of the engine. As a result, it may be difficult to make the idle mechanism work properly due to the reduced vacuum and extra exhaust back pressure.

You probably have figured out by now that I am not an advocate of extra high lift, unnecessarily long duration or very high compression for any street driven car. I prefer instead to use maximum velocity in the camshaft design which allows my cams to have more duration at 0.050", 0.100" and 0.200" lift compared to the "Brand X" cams you might get from other sources. As a side benefit of this design choice, it turns out that when you have more duration at 0.200" to 0.300" and not as high a cam lift you end up with a cam lobe with a rounder nose radius which will support higher valve spring loads and therefore will last longer than a "pointed" high lift cam. I learned a long time ago that dwell on the nose, or top, portion of the cam lobe is equivalent to lift, provided that you have the valve open far enough when the piston reaches maximum velocity. On a normally aspirated engine, I have NEVER seen power increased by adding valve lift above and beyond the flow capacity of the head.

You now have all the information you need to make the important performance enhancement choices appropriate for you own application. So, there's not much more to say except, HAPPY TUNING.

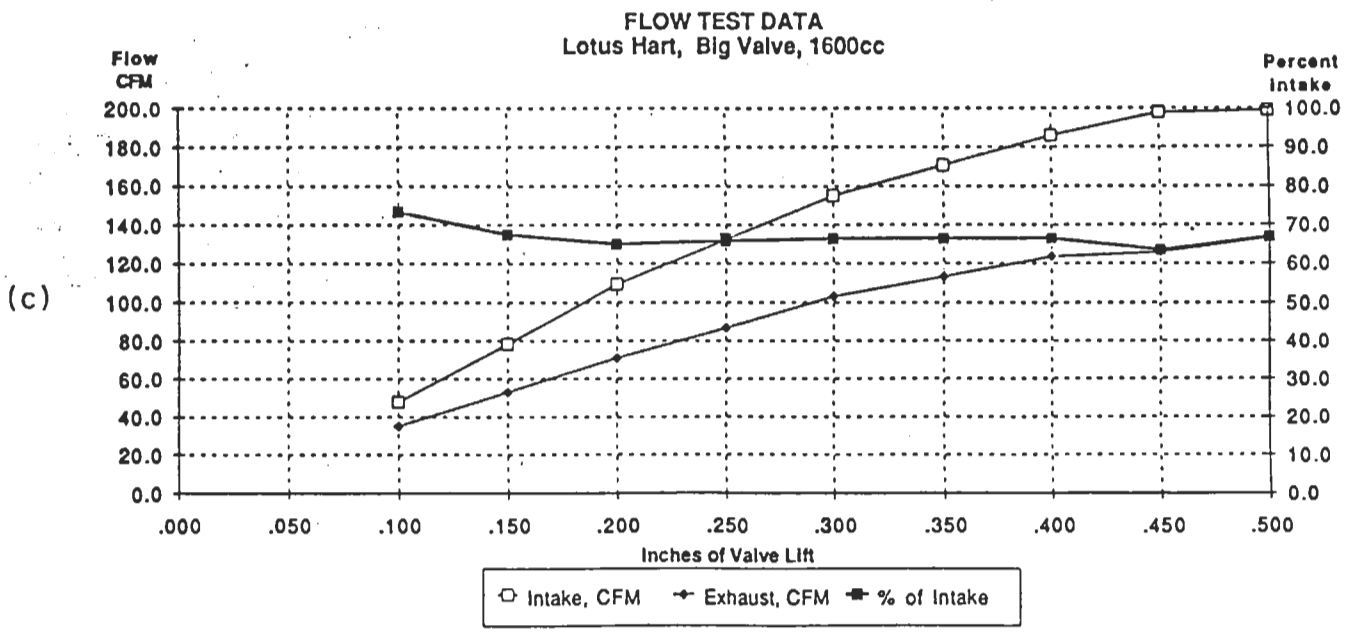
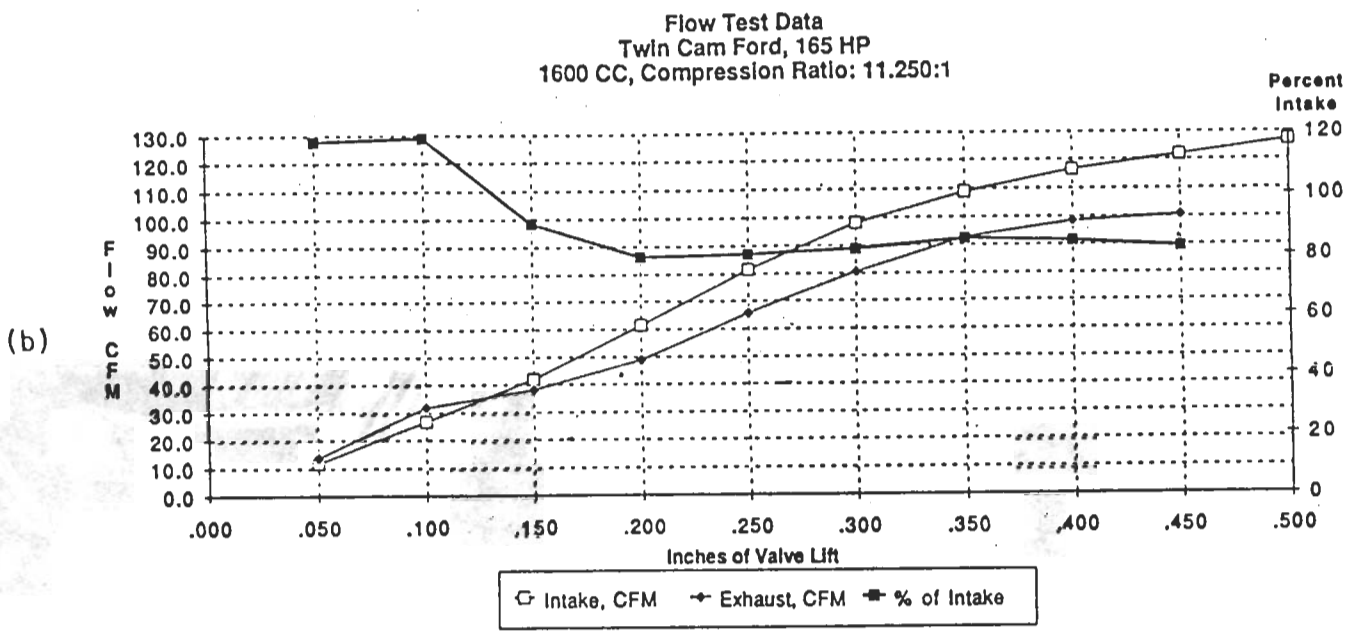
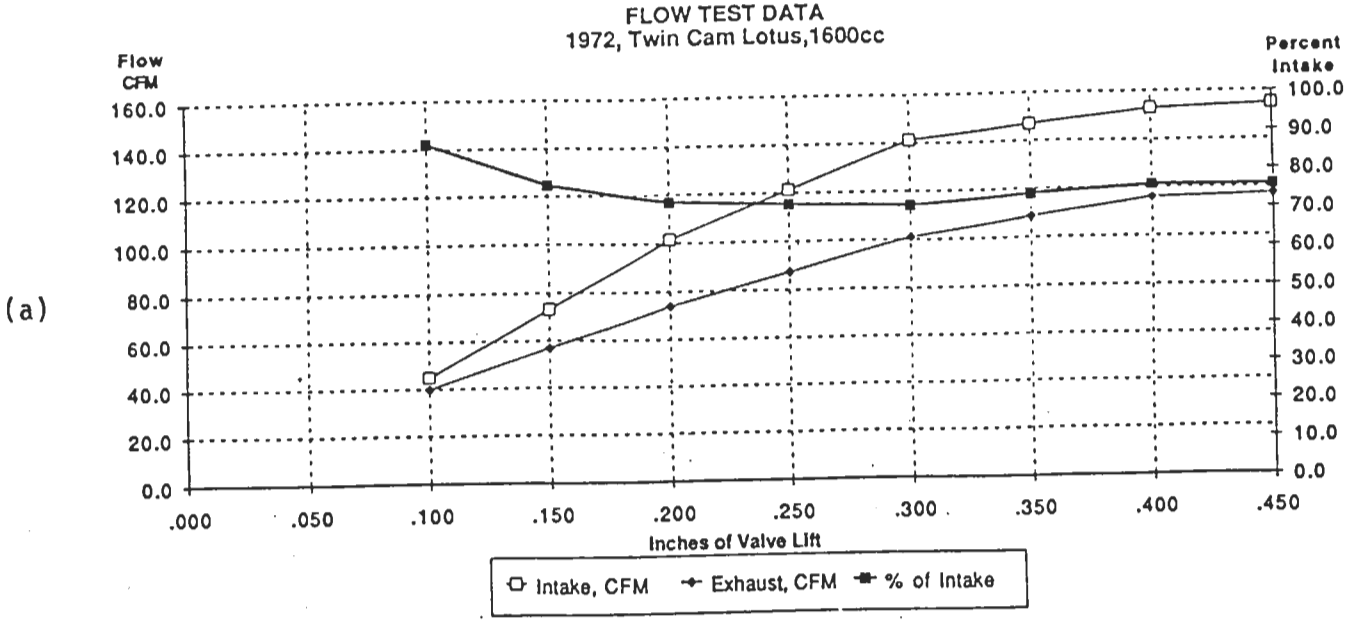


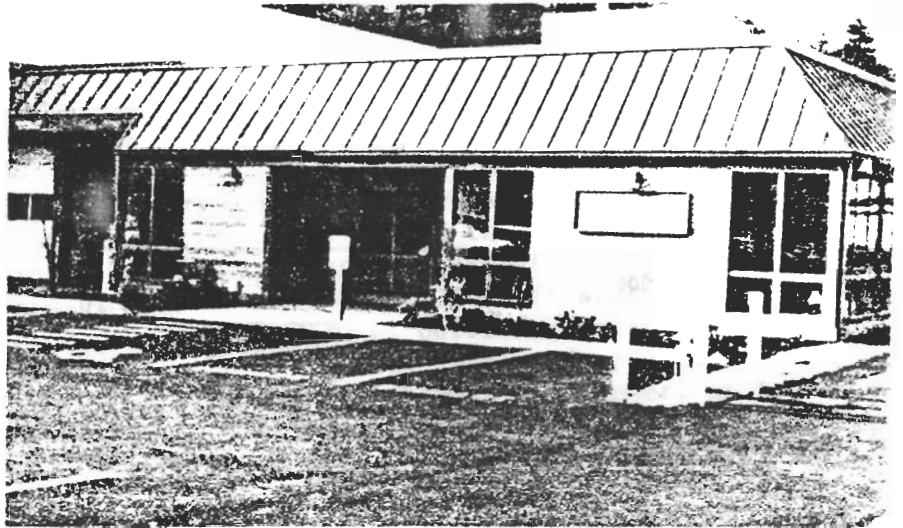
Figure 1. Flow test data for various Lotus Twin Cam heads: (a) late Stromberg, (b) "racing" Weber, and (c) Brian Hart.



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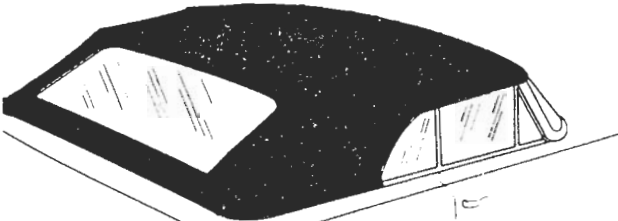
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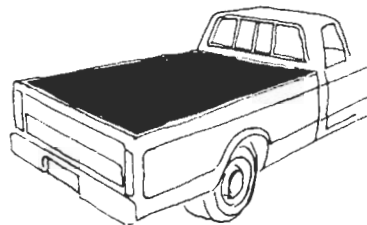
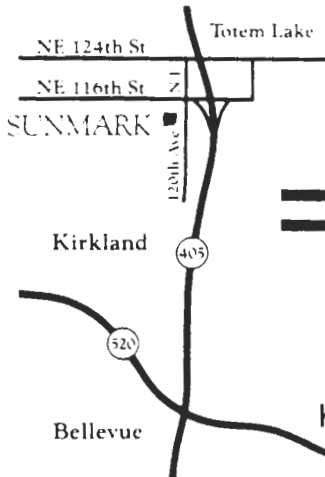


Convertible Tops

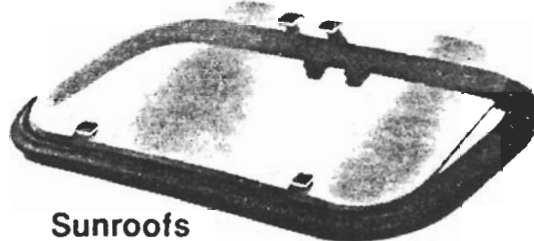


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## Some Thoughts From the Last Lotus Lines By Terry Elmore

I wanted to share with you a few thoughts I had after reading, and rereading some of the articles in the last issue of the Lotus Lines, which culminated a year under the able editorship of Jim Taylor. I do want to point out that these thoughts are my own, and as always I would welcome your responses, whether you agree or disagree with the following.

My first comments are in reference to Frank Grabner's write-up on the 1990 edition of the Portland All-British Field Meet. Frank leads off his report with the comment that he "would probably not be considered the official reviewer for our club for this event" - all I can say is, there is no such thing as an official reviewer for any event we participate in during the year, whether its an Evergreen Lotus sponsored event or something like the All-British Meet. We all are equally welcome to submit items for publication in Lotus Lines, anything from a single line to a series (for example, on a car restoration) which could run in every issue over a period of several years, and anything in between. It may seem that everything that appears in our newsletter comes from just a few people, and this is often the case, but it certainly is not a case of excluding submissions from any other members; quite the contrary, as has been stated many times, we would welcome submissions from more of our members, including multiple articles on the same subject, so as to get differing views and ideas for improvement. An example of this could be Rob Roberts' write-up on the Track Day at SIR in October - while it's only natural that Rob would cover this event, it certainly doesn't preclude some of the other participants from sharing their thoughts of the event - in fact, something I would like to see us do, at the end of events such as this, is perhaps have a brief meeting afterward specifically to obtain comments from all the participants on ideas for improvement on the next such event. Some of us have already had such discussions on future track days, and on the annual Bellevue All-British Meet, but again we want to emphasize that it isn't just a few members discussing and planning these things, and that the input and support of all the membership is needed to make these events happen.

To return to Frank's article - he commented on the lack of participation by our club members, both in cars entered (three Lotus plus the Larson's TR6), and in all the other events that make up this Meet a fixture on the annual calendar. To reply, I would like to cover a bit of history of this event, at least from my own perspective. I have attended this Meet virtually every year since 1982, the year I bought my Elan. At that time it was just a one day meet in a park, with none of the extras we've now come to take for granted (banquet, swap meet, slalom, rally, etc). The following year the meet moved to PIR, and started its growth to the major event it is today. In May of 1984, Evergreen Lotus was founded, and when at that year's ABFM it was announced that LOTUS would be the honored marque in 1985, the Meet became the premiere event on our calendar for the year and something we looked forward to all year. We were eventually able, between the LCCBC, the now defunct LOLO in Oregon and our group, to provide over seventy cars which I still feel is a remarkable accomplishment. Unfortunately, the weekend had its downsides as well - the combination of the sponsoring Jaguar Club's more blatant than usual snobbery, and the drunken display put on by the guest speaker at the banquet, Satch Carlson, led many of those present to swear to boycott this event in the future, and we have since initiated our own tradition, for example, the trek out to the Malibu Grand Prix for Lap Attacks to exhaustion, followed by dinner

together at a local restaurant. This has gone on the past several years, but after years where the Meet continued to show and improve each year, it has now leveled off to the point where it seems like one sees the same cars every year, and some members have talked of just attending every couple of years instead of annually. I wasn't planning to go myself this past year, for the same reason, but I was curious to see what kind of turnout the newly-formed Lotus group in Oregon would provide, so we drive down for Saturday with the option of staying over for Sunday. As it turned out, only ten Lotus were present, three from our group, one from Canada, and just six from Club Lotus NW, which quite frankly was a real disappointment to me, and I don't know how realistic their proposal to host the 1993 West Coast Lotus Meet is without a much greater turnout from their own members.

What I would like to see, starting with this year and increasing in the future, is less dependence by our Club on events put on by other groups and more reliance on organizing our own events; such as the Track Days, the Lotus Meet I proposed for '91 to which we invite the BC and Portland Clubs and increasing our members participation in some of the other events we have throughout the year. I would like to draw your attention to the listing of 1990 events that Jim compiled in the last newsletter to illustrate the wide variety of events we've had and will continue to have.

*Gary Wood sent me this article from the November 9th Boeing News for inclusion in our newsletter as a point of interest. It is about Karen and Ron Babb who were members of Evergreen Lotus in the past and are still active in autocrossing their Lotus Elan.*

#### Karen Babb Wins Fifth National Title

Karen Babb, past president of the Autosports Club, recently won her fifth straight National Autocross title in Class A Street Prepared Ladies Competition. Babb races regularly against several past and present national champions in Top Flight class local competition. Babb, a software engineer with Boeing Commercial Airplane Group, was one of a dozen or more club members who qualified for the Sports Car Club of America National Solo II championship and traveled to Salina, Kansas, for the annual event held September 10-14. The event drew approximately 650 competitors in more than 20 separate classes and included the top autocross drivers from the United States and Canada. Club-member competitors brought back six trophies. Babb competes in a 1967 Lotus Elan maintained by husband Ron Babb, who also is a competitive driver at the national level in the same car. Since its formation in the early 1970s, the Autosports Club has had a number of national champions in its ranks, starting with its first president, Lionel Bohrer, who was twice a champion in the mid-1970s and still drives in club events. He also is chief driving instructor at the annual club driving school held each spring. Boeing Employees or family members interested in finding out more about the sport of autocross or in joining the Autosports Club may contact Jim Wilmot at 544-0910.

# APPLICATION

Lotus Automobile Physical Damage Insurance  
Underwritten by Certain Underwriters at Lloyds London through Lotus, Ltd.

There shall be no coverage for the vehicle or any drivers listed in this application until expressly agreed by Underwriters. This application is not evidence of insurance coverage and completion of this application shall not obligate Underwriters to offer insurance or quote term.

The insurance being applied for in this application does not include bodily injury nor property damage liability insurance and will not comply with any financial responsibility law.

## LOSS PAYEE (lienholder)

Name: \_\_\_\_\_ Address: \_\_\_\_\_

## APPLICANT

Name: \_\_\_\_\_ Age: \_\_\_\_\_ Marital Status: \_\_\_\_\_  
Address: \_\_\_\_\_ Sex: \_\_\_\_\_ Occupation including title: \_\_\_\_\_  
City, State, Zip: \_\_\_\_\_

If you are not registered owner, who is (and please explain): \_\_\_\_\_

Name of previous damage insurer: \_\_\_\_\_

Have you or your spouse ever had a policy or application of Automobile Physical Damage Insurance cancelled or declined? \_\_\_\_\_ If yes, by whom and reason given: \_\_\_\_\_

Do you have Automobile Liability Insurance for the vehicle(s) listed in this application? \_\_\_\_\_ If yes, state name of insurer: \_\_\_\_\_

Are vehicles listed in this application regularly driven to work? \_\_\_\_\_ If yes, state address of workplace: \_\_\_\_\_

## DRIVERS (list all drivers including applicant, if applicant is to drive)

	DRIVER #1	DRIVER #2	DRIVER #3	DRIVER #4
name:				
age:				
marital status:				
sex:				
address:				
occupation including title:				
driver's license, state, number, restrictions, and years held:				

**MOTOR VEHICLE RECORD —**  
List all traffic violations with which any of the drivers above have been charged within the past 3 years: \_\_\_\_\_

**LOSSES —**  
List all accidents, thefts, loss, or damage in past 3 years whether or not incidents resulted in claim against insurers for physical damage: \_\_\_\_\_

## VEHICLE (use separate application for each vehicle)

date of purchase: \_\_\_\_\_  
purchase price: \_\_\_\_\_  
amount of lien/mortgage: \_\_\_\_\_  
vehicle identification number: \_\_\_\_\_  
estimated annual mileage: \_\_\_\_\_  
  
Is vehicle used for business purpose other than to and from work? \_\_\_\_\_  
If yes, please explain in detail: \_\_\_\_\_

Is vehicle normally kept overnight at applicant's address and in a locked garage which is for this Applicant or Driver's household's sole use? \_\_\_\_\_ If no, please explain in detail: \_\_\_\_\_  
  
Is garage alarmed? \_\_\_\_\_  
Alternate garaging location: \_\_\_\_\_

(NOTE: SEE NEXT PAGE FOR SUPPLEMENTAL APPLICATION INFORMATION)

## SUPPLEMENTAL APPLICATION

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### A: STORAGE —

1. Storage address:

2. Age of building:      size of building:

3. Construction type, including roof:

4. Details of other vehicles and equipment at this location which will not be insured or insured elsewhere:

5. Are any of the following kept at the location:

\_\_\_ gasoline    \_\_\_ flammables

6. Is the premises sprinklered? \_\_\_\_\_ Equipped with fire and/or burglar alarm? \_\_\_\_\_ If either is yes, give details:

7. Is any form of trade undertaken at this location? \_\_\_\_\_ If yes, give details:

### B. TRANSIT—

1. Details of transits anticipated during the period: (i.e., Road/Sea/Air/Length/Frequency/Destination):

2. Purpose of Transits:

3. If the transit is by trailer, provide details including the number of vehicles it can carry (open/closed/2-4-6 wheeled, etc.):

4. State minimum age of the tow-car driver:

5. Will the trailer be left unattended at any time? \_\_\_\_\_ If yes, when and where?

C. ON ROAD — Coverage required: \_\_\_ all risk

1. Do you or any driver suffer from physical or mental infirmity including vision or hearing? \_\_\_\_\_ If yes give details:

2. What will vehicle be used for?

3. Is vehicle alarmed? \_\_\_\_\_ If yes give details:

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### Editor's Notes by Jim Taylor

I initially figured that "Hey, its the beginning of the year, not much happening, this newsletter will be a snap", WRONG!!! This is the largest newsletter I have yet put together thanks to the last minute inclusion of the Lotus, Ltd. insurance offering. I could have left it out, but I would like to live a while longer (at least long enough to drive my as yet to be completed Europa). I know that the insurance issue is very important to each of us so I made sure that all of the information which I recieved is included in this issue.

If there ever was a meeting to attend, it is the next one at Bayside Lotus to find out who our leader will be for the next year or so. Don't forget and come put your two cents worth in on the nomination process. Its *your* club and the chairman is *your* spokesperson, *your* event organizer and so much more. Let's give John a big round of applause for the fine job he's done for the Club over the years. I'm sure he will continue to keep his fingers in the Evergreen Lotus pie in the future as well.

The Camshaft article in this issue is the last in the series of three. I hope the subject was interesting to the performance oriented members, it was packed with some very useful and very technical information (maybe too technical, just reading it and trying to make some sense out of it makes my brain hurt).

If you have any preferences for articles to be included in this years Newsletter, please call and let me know, otherwise there will be some more of the same old stuff; technically oriented articles, along with old road tests, new road tests, racing bits and funny stories about anything I can get ahold of about Lotus in general. So, stay tuned in to your favorite Lotus reading material!

P.S. I was recently at AutoGear in Redmond and they had a pretty good supply of books on Lotus cars.

Lotus, Ltd. Launches Insurance Program by Don Ferrario, President Lotus, Ltd.  
Reprinted from ReMarque, the newsletter of Lotus, Ltd.

Lotus, Ltd., in conjunction with Parish Insurance of Nashville, Tennessee, is now able to offer, exclusively for club members, comprehensive and collision insurance for all Lotus car models, from vintage racers to new Esprit Turbos. The new program, whose underwriting was arranged through Lloyds of London, will be sold and administered entirely by Parish Insurance. The club, which worked closely with Parish to establish a program that would meet the needs of its membership, will serve as the master policyholder, but will derive no financial benefit from insurance sales.

The roots of this program go back to early 1989, when Bill Parish, a partner with insurance broker Cooper, Love and Jackson, had a discussion with Ron Foster, the president of Lotus Cars, USA. The purpose of the discussion was to find a way to insure new Lotus Esprits, because Lotus had found itself losing sales when potential buyers were quoted premiums in excess of \$6000 per year - if they were offered insurance at all.

The idea of an auto manufacturer setting up its own insurance program was not new. For various reasons, though, it had never been done. In order to convince the underwriters that the risk deserved a much lower premium than was commonly being quoted, Parish and Foster had to show that the loss history for Lotus cars was, in actuality, quite low. To do this, they had to prove: (1) that the typical Esprit owner was not a "hot rodder" who was likely to be involved in accidents; (2) the typical Esprit owner drove relatively few miles annually; and (3) that Lotus Esprits were not as difficult and expensive to repair as most underwriters had assumed.

To prove the first point, the Lotus factory in England and the company's distributor in the U.S. both had to open their records to close scrutiny. This is where many previous, similar efforts had foundered, with most manufacturers deciding that they didn't some outside party getting that deeply inside their files.

By studying the demographics of actual buyers, Parish as able to show who really buys Lotus cars, and how they were very different from the average Porsche or Corvette buyer. Further, by studying the sales of Lotus "crash" parts, it was possible to show that Lotus cars are relatively rarely damaged.

To show the typical annual Lotus mileage (since lower mileage reduces the exposure to loss), used Lotus cars available for sale were compared with other marques. Porsches and Corvettes, for example, are quite often driven in excess of 20,000 miles per year - sometimes much in excess. Although not totally unheard of (I know of one Turbo Esprit with well over 100,000 miles on the clock), it is extremely rare that a Lotus is driven that frequently.

To prove the third point - repairability - required a major undertaking. The underwriters were invited to watch the making of new Lotus cars. They were then shown the repair processes. While no one will say a Lotus is a cheap or easy car to fix, Lotus was able to show that they are less so than the typical exotic, such as a Ferrari. For example, Lotus bodies are relatively easy to section out, and it is possible to replace an entire chassis. Normally, severe frame damage will total a car; not so on a Lotus.

After all this, the underwriters were satisfied that the loss exposure would be much lower than that of other high-priced sports cars. The word was put out that Cooper, Love and Jackson, in conjunction with Lotus Cars USA, had pulled together an insurance program, and articles soon appeared in such publications as *AutoWeek* and *The Wall Street Journal*. To overcome the obstacles was big news, and all the publicity made quite a splash.

Too much of a splash, unfortunately. Underwriters at Lloyds are quite reserved by nature. If they wanted to be that public, they wouldn't keep themselves hidden within Lloyds. The underwriters quickly began envisioning the "wrong type" of buyers coming into the loss pool after reading how they could get such cheap insurance. After all, why pay \$6,000 per year on a Porsche Turbo when you could get insurance on an Esprit Turbo for \$2000? They didn't want people buying a Lotus just for the cheap insurance, because that would have likely resulted in a substantially different loss history.

Before the first policy was written, the underwriters backed out. After some renegotiation, however, they came back with an alternative plan. But foremost on their list of changes was the elimination of all affiliation with Lotus Cars. A suitable "loss group" would have to be found - and the "loss group" could not be one that was founded solely for the purpose of the insurance program.

Last January, at the suggestion of Lotus Cars USA, Bill Parish contacted Mark Winston, who was then the president of Lotus, Ltd., to see if the club would be interested in the insurance program that he had been working on with Lotus. Parish emphasized that such a program would help Lotus, Ltd. attract more members. However, while Winston was basically receptive to exploring the idea, he pointed out that increasing the size of the club had never been a very high priority, and that an insurance program geared just for Esprit Turbo owners would benefit a relatively small percentage of the current membership. Winston encouraged Parish to expand the program so that it would include all Lotus models and asked him to submit full details of his proposal for the incoming club administration to consider.

Beginning in March, Bill worked with me to revise the program to make it more suitable to the club. Many changes had to be made. Negotiations to iron out the fine points took many months. And, while Bill worked to make the program acceptable to Lotus, Ltd., he also had to work to make Lotus, Ltd. acceptable to the underwriters. Lotus, Ltd. is exactly the type of organization they desired - but it took several months of effort by Bill to get them to understand that!

The finalized program is one that should be good for everyone. For our members, we now have readily available insurance at prices that are generally much less than those offered elsewhere. For our club, we have a great benefit of membership - one that should attract and keep true enthusiasts as members for a long time. For Lotus Cars, we have helped to remove a serious impediment to purchasers of both new and used cars (which should boost resale value, and thus, repeat purchases). Finally, with our anticipated excellent loss record, we expect the program to be profitable for both Parish Insurance and the underwriters. It's been a long time coming, and a lot of work for all, but I am confident that the end result has been worth it.

The Lotus, Ltd. Insurance Program by Don Ferrario, President of Lotus, Ltd.

How much do you pay for insurance on your Lotus? Have you had trouble obtaining Lotus insurance at any price?

Over the past few years, I have heard many troubling insurance woes from Lotus, Ltd. members. Recently, a friend told me he was going to have to sell his Elan because his insurance company didn't want to write the risk any longer. Another member wanted to buy a used Esprit, but couldn't get anyone to give him a price. ("What's a Lotus?... We can't insure one of those"). Quotations of \$6,000 per year - or more - on a new Turbo Esprit have not been uncommon.

Why has this been such a problem? It certainly isn't common to hear of a member who has seriously damaged his or her most prized possession. The reason insuring a Lotus is so difficult arises from statistics - or more accurately, a LACK of statistics. Insurance companies play by the numbers: Compute the average loss for a class of vehicles or drivers, and charge a premium accordingly. The problem is that there simply hasn't been a good statistical base for Lotuses from which to draw averages. The standard insurance company response has been either a very high rate quote or a complete refusal to write a policy, because, without sufficient data, the profit on a policy simply isn't considered to be worth the potential loss of an \$80,000 car.

Solving this problem required someone who could look beyond the statistics and gauge the true risk. Bill Parish, an insurance broker for 27 years who has set up marque club programs before, including one for the Shelby American Club, was up to the task. Through Parish's efforts, certain underwriters at Lloyds of London have agreed to underwrite a program specifically for Lotus, Ltd. members. (The program's policies are not underwritten by Lloyds itself, because Lloyds is not actually an insurance underwriter. Lloyds serves as a type of "commodity exchange", putting brokers, such as Bill Parish, in touch with underwriters who are familiar with different risks - hence the phrase "certain underwriters at Lloyds of London").

Through this program, you may purchase collision and comprehensive coverage for your Lotus. You must still, however, make separate arrangements to obtain liability coverage from the agent of your choice. (Fortunately, liability coverage is not normally a problem to obtain, because its cost and availability do not depend on the type of car being covered; the club program is designed to provide the coverage that is otherwise difficult to obtain). Because this program is exclusively for Lotus, Ltd. members, our future loss ratings will be based solely on the driving and loss experience of our club. Our program will not be damaged by the poor record of other groups.

The club's program actually involves two separate insurance plans, because it is assumed that relatively new Lotus cars will be driven more than the older models. Which plan is most appropriate for you depends on the amount you drive your Lotus. (Note: The following mentioned premiums do not include 5% tax, are subject to change without notice, and are, of course, dependent on prior driving and accident experience).



New and recent-model Lotus cars will be quoted premiums on an individual basis. When annual car mileage is anticipated to be 12,500 or less, the typical premium in most areas of the country (see chart) will be \$2,000 per year for a brand-new Esprit Turbo SE, while the typical premium for a used Turbo with a value of \$30,000 will be approximately \$1,000 per year. This policy generally carries a deductible of \$1,000. If higher annual mileage is anticipated, the deductible will go up, but the premium will remain the same. This type of policy can also be written on older Lotus models that are driven more than 2,500 miles per year permitted under the second plan (which is described below), in which case premiums will be individually quoted. The maximum insured value under this plan is \$100,000.

Many older Lotus models are driven on a limited basis, and the exposure to loss is therefore greatly reduced. Under the second plan, which is for cars driven 2,500 miles per year or less, the premium will be a percentage of the agreed-upon insured value. Within the mileage limitations, this type of policy can be used for any Lotus model except 1988-or-later Esprit Turbos. The percentage used to compute the premium varies, depending on the annual mileage driven (see chart), and is subject to a premium minimum of \$250 per year. The maximum insured value for cars under the limited-mileage plan is \$100,000.

If your Lotus is normally not driven on the street or you anticipate very limited road use (up to 250 miles per year), the premium under the second plan is even less. This is to allow those rapidly appreciating vintage Lotus models to be affordably insured for full value. For example, a \$100,000 Lotus vintage racer that is not street-driven may be insured for an annual premium of \$600. The maximum insured value for a non-street-use policy is \$300,000.

In order to get this kind of pricing, there are restrictions to these policies. This article will mention some of them, but it is not meant to be a total review of all the terms. BEFORE YOU SEND ANY MONEY TO BUY INSURANCE, READ THE ACTUAL POLICY! That noted, let's review some of the fine print.

First, before you can buy a policy, you must meet the following requirements: (1) You must be a current, paid-up member of Lotus, Ltd., and you must maintain your membership while the policy is in force; (2) You must be at least 25 years of age; (3) Your car cannot be based in any of the five boroughs of New York City.

The policy covers your Lotus for damage or loss during normal driving. It also includes items normally referred to as "comprehensive" coverage, such as theft and damage while not being driven. The vehicle must always be locked when left unattended. While parked at your home, the vehicle must be kept in a locked garage. (The underwriters have the option to waive the garage requirement, and, if you live outside a metro area, it is likely they will do so. If you don't have a lockable garage, however, be sure to note this on your application).

The policy is written along standard European policy terms. In particular, this means that ONLY named drivers will be allowed to drive your car. There will be no exceptions to this. If you are going on a trip where a new driver will be sharing the driving, you should contact the agency and add this person

to the list. There is no charge for additional names, but they must be listed beforehand.

Only the standard, original equipment-type radio is covered against theft. Other radios, television equipment, CBs, radar detectors, etc., are not covered. Special paintwork and body work are generally not covered. (If the insured value of your Lotus involves some special custom bodywork, you should discuss this with the agent before you buy the policy). Tires are not covered, either, unless damaged during a collision that causes damage to other parts of the vehicle.

Coverage does not extend to any type of off-road activities. These include autocrossing and "driving schools" or similar track events, including those sponsored by Lotus, Ltd.

All questions about this insurance program should be directed to Bill Parish at 1-800-274-1804. In order to further his business with programs of this type, Bill has separated from Cooper, Love and Jackson as of October 1, 1990, and future business with this program will be conducted through Bill's new company, Parish Insurance, Inc. To get a quote and a copy of the policy, fill out the application and send it to: Parish Insurance, P.O. Box 158598, Nashville, TN 37215.

### LIMITED-MILEAGE-USE LOTUS RATES

Annual rates and deductibles are expressed as a percentage of the agreed insured value, subject to a minimum annual premium of \$250. Vehicles are subject to appraisal where the insured value exceeds \$30,000.

COVERAGE:	Storage Only	Storage/ Transit/ Paddock	Limited Mi. Road Use (250/yr.)	Limited Mi. Road Use (2,500/yr.)
Lotus Race Cars	0.50%	0.60%	----	----
Lotus 7 ('57-'73)	0.50	0.60	0.70%	1.25%
Caterham 7 ('73-on)	0.50	0.75	1.00	1.75
Early Elite ('56, '58-'63)	0.50	0.60	0.70	1.25
Elan ('62-'73)	0.50	0.60	0.70	1.25
Elan Plus 2 ('67-'74)	0.50	0.60	0.70	1.25
Europa ('67-'75)	0.50	0.60	0.70	1.45
Later Elite ('74-'80)	0.50	0.75	1.00	2.00
Eclat ('75-'80)	0.50	0.75	1.00	2.00
Esprit S1/S2 ('76-'80)	0.50	0.75	1.00	2.00
Esprit Turbo ('80-'87)	0.50	0.75	1.00	2.00
DEDUCTIBLE:	1.00%	2.00%	3.00%	3.00%
MAX. INSURED VALUE:	\$300,000	\$300,000	\$100,000	\$100,000

### ESPRIT TURBO ('88-ON) RATES

AREA	TYPICAL PREMIUM
Chicago, Boston, Miami, Detroit	\$4,000
Dallas, Houston, St. Louis, Atlanta, Los Angeles, New Orleans	\$3,400
Philadelphia, San Francisco, Baltimore, Washington, D.C.	\$2,700
All others (except New York City)	\$2,000

### Classified Advertisements

- 1959 Lotus 18 F jr Complete, Original, new brakes & primer, \$75,000. 1960 Lotus Elite RHD New upholstery & paint, \$35,000. Will consider offers and/or trades, (209) 599-3095
- 1984 Lotus Turbo Esprit, Road and Track cover car September 1985. We have the exact edition with photos. Lotus yellow, 11,000 miles, one owner. Pristine condition! Also red/Tan 84 Turbo, Flawless \$27,900 or better idea, Trades gladly accepted. Kurt Hansen (415) 945-1067
- JD'S 40 PT. INSPECTION SERVICE Let me show you how to know what you are really buying when you look at a used car. Special price with this ad. John Daniels, 788-2729

Meeting Locations

January Meeting

Saturday the 19th at 1:00pm  
Bayside Lotus  
517 East Pike  
Seattle, WA.  
(206) 324-8488

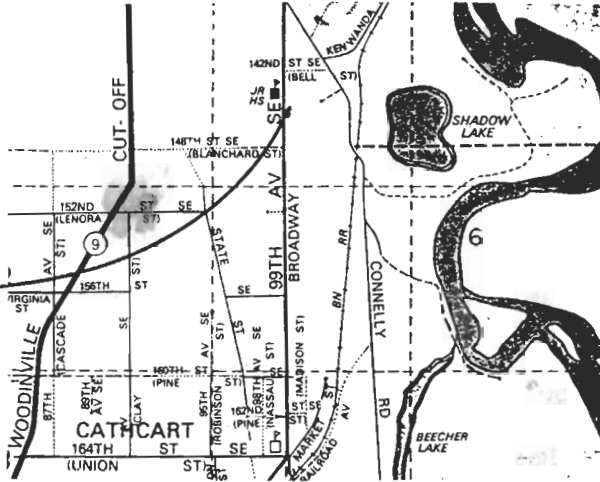
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February Meeting

Sunday the 17th at 1:00pm  
Bob and Shari Crichton  
14529 99th Avenue SE  
Snohomish, WA.  
(206) 668-6841

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**Club Officers: John Daniels, Chairman, 788-2729 - Nikki Daniels, Membership  
Terry Elmore, Club Liaison, 334-5768 - Jim Taylor, Newsletter, 232-2237**



**EVERGREEN LOTUS CAR CLUB**

**John Daniels, Chairman  
11232 312th NE  
Carnation, WA 98014**



**FIRST CLASS MAIL**