



CLUB ELITE

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Dear Member,

You will notice many differences with this particular issue of the Club Elite newsletter. First of all, it is being written by a new editor who hopefully will only have the job one time. My name is Dick Buckingham, Jr., and I volunteered in what my wife says was a weak moment to take care of one issue of the newsletter while Bill and Barbara are in England. Secondly, the newsletter is being typed on an IBM proportional spacing typewriter and printed by a photo off-set process which gives more professional results, but, of course, costs more money. This is the way the newsletter of the American Lancia Club is done, but it is a larger organization and the increased cost associated with this can be spread out over more members. The reason that I happen to be familiar with the ALC is that I am the President (that's the reason that my wife wasn't too happy about my taking on additional responsibilities). If with the increase in dues there appears to be a surplus, I hope to talk Bill and Barbara into using this format all the time.

It is my feeling that most of the members would be as interested as I was in finding out about Bill Hutton and his wife and why they have taken on such a big project as running the Elite Club. When I mentioned this idea to Bill, he wasn't too keen on the idea saying in his modest way that he didn't feel that the membership would be interested. If there are any errors in this material, I apologize, and I hope that you will agree that this is a worthwhile story to have in the newsletter.

After some time in college, Bill decided to see some of the world. He went to England and, naturally, bought an Elite. I'm not sure if this car was wrecked when Bill purchased it or if he had an accident (maybe he was trying to keep me in the dark about that), but anyway, he had a mechanic working on the car who raced on the weekends. Bill would go along to the races with this mechanic and through this association was introduced to the Cosworth Company in London which at that time was a real back-yard operation. Bill went to work for them, and there must

have been an element of exploitation in this relationship because Bill was working without a work permit for \$.75/ hr. About this time, he had to return to the U. S. for his military obligation which was taken care of by six months active duty and a reserve obligation. As soon as possible, he was back in England where Cosworth was growing by leaps and bounds. The general manager, a Mr. K. Duckworth, had a most attractive young girl working for him as his secretary, and her name was - you guessed it ! - - Barbara. As of the 3rd of Sept., they have been married for six years. Bill worked for Cosworth for awhile, and then the two of them returned to Clarksville, Tenn. where Bill had been raised. He opened a service station and was doing foreign car service. Finally he decided to specialize and now limits himself to VW engine rebuilds - - that is the nature of Hutton Engineering. His love affair with the Elite continued after the first one in England, and he has now owned 14 of them. Coventry Climax engines are the only other kind besides VW that he will work on, and he does stock the more commonly needed parts for his own rebuilding needs as well as those of club members. The Huttons currently own a Lotus plus 2 and a pick-up truck (you may recall that their perfect Elite was burned in a fire on Easter Sunday). Bill has also owned Alfas, TRs, MGs, a Europa, and what was probably the first AC Ace in the U. S. Besides their interest in cars and Club Elite, Bill and Barbara also find time to love and care for two dogs, two cats, one pony and two skunks. I, for one, certainly think that we Elite owners are super lucky to have such an active and interesting club, and, for the most part, it is due to the dedication and enthusiasm of one family - the Huttons. Thank you very much Bill and Barbara for making the whole thing click.

I think one way we could all show our appreciation to the Huttons would be to take as much work off their shoulders as possible. They were talking in Pa. about how much mail they get requesting information. This is a very big job answering these letters, and, of course, Bill feels that if the writers don't get the information that they have requested and in short order that they may not be interested in Club Elite. Several suggestions were made, the most useful of which seemed to be to have some form letters covering certain areas since many of the requests seemed to be for information regarding recurring problems. A more simple solution would be for those of us who are members of the club to call Bill if we need any help. Certainly it is easier for him to talk on the phone than to write a letter, and it takes so much less time. Also further problems may be elicited by the discussion and on the phone can be taken care of immediately. Perhaps the biggest thing that we could do is supply Bill with material for the newsletter to make his job easier or like in the present case (also next month) volunteer to take the whole burden off the Huttons for a month at a time.

Some months back, I sent in a story about my problems driving my Elite from Indianapolis, Indiana toward, but unfortunately not to, Washington, D.C. The car had numerous problems on the way, but the biggest one stopped me dead late at night in Bedford, Pa. I had had a sudden loss of power and felt that the problem was probably a valve dropped through a piston. I finished the trip with the car on a trailer and put it in the recreation room of our three story townhouse (those sliding glass doors aren't hard to remove!). Three corpsmen from the hospital and I managed to lift the engine and transmission out of the car after the accessories had been removed with the aid of two ropes and two 2x4's. It really isn't very heavy. The problem was readily apparent - the end of a rod (#4 cylinder) was sticking through the side of the block behind the starter motor. One rod bolt had

worked loose and was in the oil pan unmarked. The other one broke from the strain soon, allowing the rod cap to fall down, also. Then the crank just darn near pushed that rod through the side of the engine. After I got the engine cleaned up, I was able to fix the block using this technique: 1. File edges of wound clean and square with the surface. 2. Cut pieces to fit from quarter inch aluminum stock. 3. Cut and shape piece of thin steel stock to fit behind damaged area with enough overlap onto good metal that three or four holes can be drilled to support the piece of steel which in turn supports the pieces of aluminum. 4. Spot weld the aluminum pieces to the block using heli-arc welding technique. 5. Remove piece of steel and finish welding aluminum pieces in place. 6. Weld the holes closed which were used to hold the piece of steel in place. This gave a very adequate repair, and the total cost of the welding was only \$10.00 since I had done all of the preparation myself vs. approximately \$50.00 if I hadn't. Naturally one should make sure that no oil or water passages are compromised and that the block doesn't lose any necessary structural strength.

Some other areas of interest which I encountered in my rebuild were the following:

1. The engine and transmission can be easily removed as a unit after the gearshift and rear mounting bolt are removed. (This bolt goes through the transmission below the gearshift and is removed by raising up the carpet on both sides of the transmission tunnel.)
2. I had the armature turned on my starter motor and rewound the field coils. If you undertake this job, be very careful not to let the bolts which hold the starter motor together short out the field coils- - this is very easy to do when you reassemble the motor since you can't see where the bolts are with the unit back together.
3. The timing cover can't be removed without removing the head or pulling two studs which extend from the head down through the timing cover.
4. If it becomes necessary to remove the gas tank for any reason, be sure to have somebody keeping tension on the gas line from the engine compartment as the tank is put back in place. Otherwise the plastic gas line can become doubled over between the tank and the car body structure, thereby shutting off the flow of gas.
5. I found both of my horns to be damaged by water which had run down the wires into the horns. They were fixed by cleaning the contacts and then sealing the hole around the wire with silicone sealer. The horns, by the way, are reached through the front wheel wells.
6. The tach drive unit on the back of the generator has no provision for periodic lubrication. Mine was bone dry and was very difficult to get apart, but it can be done.
7. The rear oil seal on the engine was the biggest problem area. It is composed of two piston rings around the back of the crankshaft which seal the back of the engine by fitting inside a ring on the engine- transmission adaptor plate. The problem is how to get these rings compressed so that they will fit inside the plate. There is no room for any type of a piston ring compressor, and the factory manual gives no help in this area. I

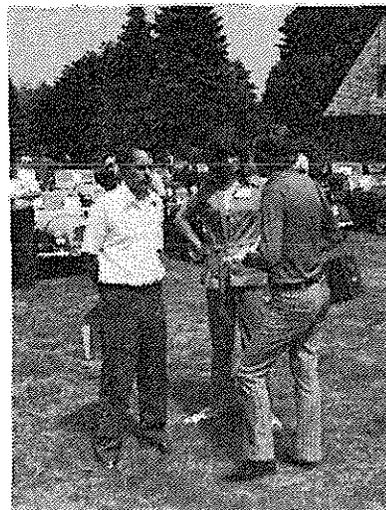
called up Bill, and he felt that you just lubricated the hell out of the whole thing and forced the plate on. When I did this, both rings broke. I made sure that there were no burrs or rough edges on the ring before I forced it on, and even used some 6/1000 feeler gauges to help in compressing the rings. All to no avail. When I asked others at the Reunion about their solutions to the same problem, they didn't seem to think any problem existed. If anybody has had similar problems or has a good solution I, for one, would enjoy hearing about it. Right now I am using a fair amount of oil since it leaks out the back of the engine. 50 wt. does leak slower, however.

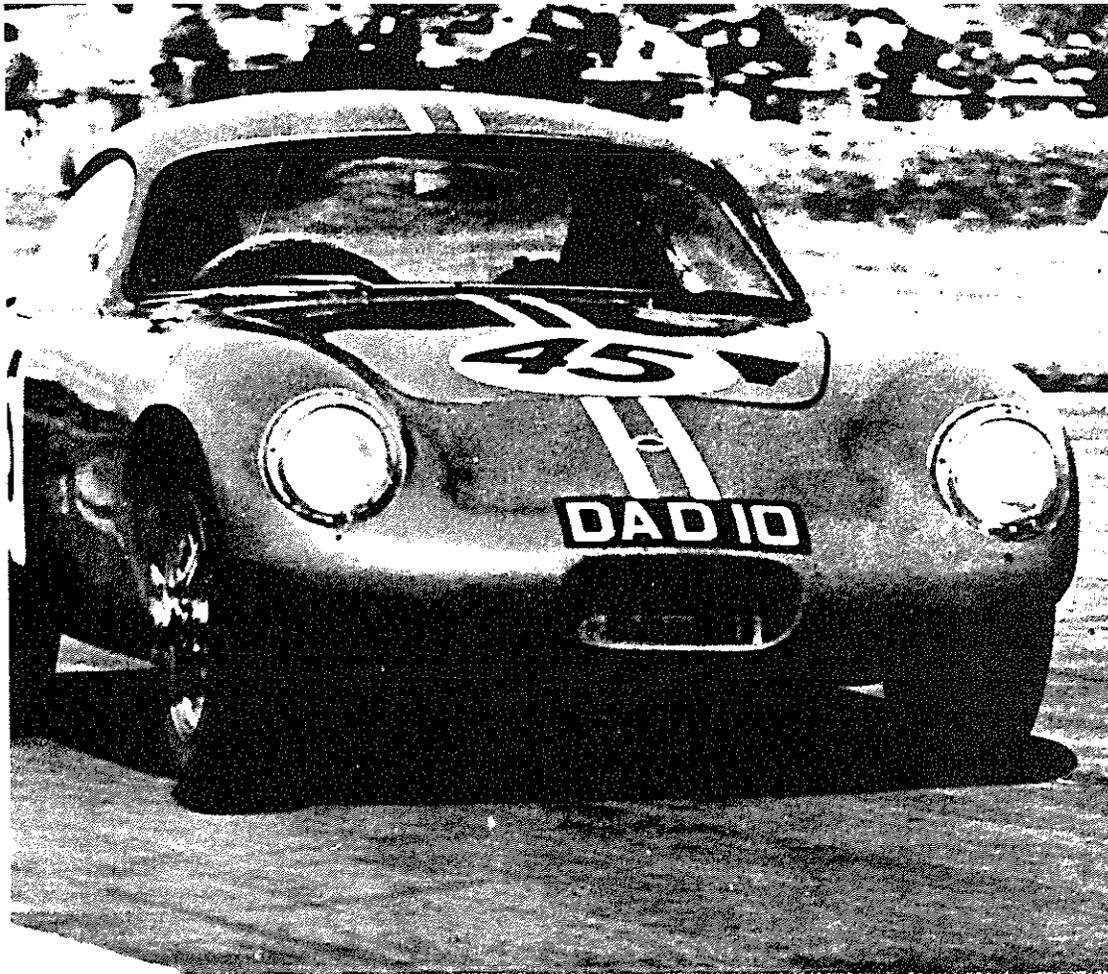
8. Make sure that the caps which hold the cam bearings in place are on properly and in the right order. They are numbered.
9. Replacing the engine and transmission can be done with them as a unit or separately. I did it separately. It was necessary to remove the pulley from the front of the crankshaft in order to gain the clearance necessary, and I filed a mark in the pulley opposite the groove for the woodruff key in order to make it easier to put back in place.
10. The pistons in the disc brake calipers can rust in place. They can be removed by using air pressure, penetrating oil, and tapping on the piston. Be careful though because the piston may come flying out. This problem can be avoided on any car by replacing the brake fluid once a year and completely draining the system. It is the moisture which brake fluid attracts which causes the problem.

11. I was able to get all of the parts I needed for my engine rebuild from Bill.

I hope that some of my experiences will be of help to anyone else in the club who is contemplating similar mechanical work. I have worked on many different foreign cars, and I think that the Lotus, for the most part, is a very straight forward design which lends itself to owner maintenance and repair.

The pictures below were taken at the reunion held at Mount Pocono, Pennsylvania.





General specification : Lotus Elite

Chassis/body unit: integral chassis/body construction. Unique, extremely strong chassis-less structure of fibreglass – reinforced polyester resin, conferring the important advantages of exceptional strength, impact resistance, sound damping and thermal insulation. Two-seater, two-door coachwork offering spacious accommodation for two persons with provision for luggage in separate compartment. Wrap-round front and rear screens. Removable side windows with hinged quarter lights for ventilation. Stainless-steel front and rear bumpers. Luxurious adjustable seats, washable roof interior, door panels and tunnel trim. Matt non-reflecting instrument binnacle. High-quality floor carpeting. Rear parcel shelf over internally mounted spare wheel. Spacious door pockets. Front parcel shelf beneath fascia. Foot-operated windscreen washers. **Front suspension:** independent by transverse wishbones incorporating anti-roll bar. Springing by combined coil spring-damper units reacting through a single attachment point at each end. **Rear suspension:** independent by Chapman-strut system, incorporating combined coil spring-damper units and double articulated drive shafts giving Lateral location. This system has been expressly designed to offer a regulated amount of camber change with variations in load, to maintain constant handling characteristics under all conditions. **Brakes:** hydraulically operated $9\frac{1}{2}$ " (24.13 cm.) diameter disc brakes, outboard at front; inboard at rear. Umbrella-type handbrake mounted under fascia operating rear calipers via cables. **Steering:** lightweight rack and pinion steering gear; 15" (38.1 cm.) diameter hand-crafted, three-spoke, wood-rim steering-wheel. $2\frac{1}{2}$ turns lock to lock. **Power unit:** Coventry Climax FWE, light alloy, water-cooled, wet-liner, single o.h.c. 4 cylinders, bore and stroke $3" \times 2.62" = 74.25$ cu. in. (76.2 mm. \times 66.6 mm. = 1,216 cc.). Three bearing crankshaft. Wet sump lubrication with full-flow oil filter. Twin S.U. variable choke carburettors on light alloy manifold. Cast-iron exhaust manifold with twin silencer/tail pipes. Compression ratio 10:1 80 b.h.p. @ 6,100 r.p.m. **Cooling system:** tube and gill radiator with integral header tank. Circulation by engine-driven water pump. Thermostatically controlled electric cooling fan. **Fuel system:** rear-mounted fuel tank, total capacity $6\frac{1}{2}$ gallons (29.5 litres). Chromium-plated screw fitting fuel filler cap. **Transmission:** hydraulically operated 8" (20.32 cm.) diameter single dry plate clutch. Four-speed and reverse gearbox with remote-control shift. Ratios: First. 3.67:1. Second. 2.20:1. Third. 1.32:1. Fourth. 1.00:1. Reverse. 3.67:1. Synchronesh on upper 3 ratios. **Final drive:** Hypoid bevel final drive unit in light alloy casing; rubber mounted to chassis/body structure. **Electrical system:** Lightweight heavy duty 12-volt battery. Coil and distributor ignition with centrifugal advance and retard. Belt-driven generator; automatic voltage control. Fuse box mounted under hood. Recessed Lucas 7" (17.78 cm.) headlamps. Separate sidelamps. Flashing direction indicators. Twin stop-tail lights; twin rear registration plate lights; twin high-frequency horns. Instrument lighting with brightness control. Two-speed electric screen wipers. Door-operated interior courtesy light. **Instruments:** Tachometer 0–8,000 r.p.m. 4" (10.16 cm.) diameter; Speedometer 0–140 m.p.h. (0–225 k.p.h.) 4" (10.16 cm.) diameter; oil-pressure gauge; fuel contents gauge; water-temperature gauge; ammeter. **Wheels and tyres:** five knock-on, wire-spoked, steel rim wheels fitted with 480 \times 15, 4-ply rating, high-performance tyres. **Dimensions and weight:** wheelbase: 7' 4" (223.5 cm.). Front and rear track 3' 11" (119.38 cm.). Overall length 12' 6" (381 cm.). Height to roof 3' 10" (116.8 cm.). Overall width 4' 10" (147.32 cm.). Minimum ground clearance $6\frac{1}{2}$ " (16.5 cm.). Weight: 1260 lb. (572 kg.). **Colours:** Tartan Red, Conway Yellow, Light Blue and Cirrus White paintwork; Black, Red or Tan interior trim and seats. **Principal performance figures:** maximum speed: 115 m.p.h. (185 k.p.h.). Acceleration: 0–60 m.p.h. (97 k.p.h.) 11.1 sec. 0–100 m.p.h. (161 k.p.h.) 33.8 sec. Fuel consumption: 35 m.p.g. (8 litres 100 km.). **Optional extra equipment:** heater/demister unit. Alternative final drive ratio 4.2:1. Seat belts. Special paintwork in single- or dual-colour schemes to own specification. Quick release fuel filler cap. Full Race specification to FIA regulations, details available on request).

The fabulous Lotus Elite – aristocrat of cars for home-assembly – could be yours tomorrow. Basic requirements for ownership include possession of a few hand tools, a burning desire to escape from the frustrations of normal motoring and twenty-four hours in which to achieve your aims. (If you successfully assembled a jigsaw puzzle during childhood, you have the technical proficiency to build your own Elite.)

