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EXPERIENCES WITH THE LOTUS ELITE SERIES II

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#1366

My wife and I came to the Elite via unpleasant experiences with a 1959 Porsche 356A Super Coupe. Hundreds of man hours lovingly lavished on the chassis and running gear all went for naught as the body and shell gradually disappeared in a sea of rust despite repeated welded and riveted replacement of metal. We decided that an inability to rust would lead the list of virtues on any subsequent car bought as a classic. Its alleged unreliability had made the word Lotus something of a standing joke for Porsche owners, but as we cast about for an alternative to our Porsche, the Lotus and particularly the Lotus Elite showed all the features taught to us as important by a high-powered Bugatti collector friend: beautiful, unique, limited production run, engineering tour de force, good track record, and the product of a "one man" company. It had the additional plus of being all fiberglass. We were warned that the plusses might prove offset by a certain tendency for problems. We soon found out that the admonition contained some element of truth.

An advertisement in the Washington Post brought us to see our first Lotus Elite in the Virginia suburbs during a twilight period of scattered sleet, snow, and rain. It was parked on a back lot behind an apartment house where it had recently been towed by the owner, himself recently discharged from the Navy. The owner's overseas war duty had left the car unused for over 2 years and it had a number of glaring problems, including an inability to run. When the unhappy owner attempted to start the engine to demonstrate that it would turn over, oil spurted from a sprung oil line on the base of the head. Rain had soaked the interior through the gap made by a missing quarter window. An accompanying cardboard box contained sundry spares as well as a picture clipped from an old page of Road and Track depicting the car as it might have been at one time, and was - by dint of our labor - to become. After several days of dickering and no other serious clients, he settled for our compromise price, and the car was hauled away on a transporter. As I watched it disappear into evening traffic, realizing that we had 3 weeks to get it into road condition before we moved to New England, I wondered what we had really set ourselves up to do.

The glaring defects soon made themselves obvious during the initial period of frantic efforts at preparation for the journey to Massachusetts. The body contained remnants of 8 previous paint jobs; a cracked and unstable tail panel and nose; doors loose on the hinges so they would flap at every bump; missing right vent window; water-rotten interior; cracked seat seams with numerous divots in the upholstery; by contrast almost incidental broken horn and light plastic fob. Fitting a new battery enabled us to check the electric system which revealed a scatter of missing and blown bulbs in the instrument panel; an interesting, unreliable, and highly unpredictable pattern of lights turning on and off as the function of attempting to flash the direction signals, turn on the headlights, press on the brake pedal, or even blow the horn; radiator fan whose screaming bearings limited its use. The chassis contained its share of problems including 3 bald Michelin tires, showing to at least no camber, toe, or balance wear; frozen brake cylinders with a rigid brake pedal; front axle stubs installed the wrong sides round (right on left and left on right); a broken rubber u-joint in the steering arm; frozen right front upper shock bushing and through bolt. The drive train inspection revealed the unpleasant information that all u-joints were worn out, especially the front u-joint which was totally destroyed in the drive shaft itself, a destroyed set of outboard rear bearings; approximately 90 degrees of play in the rear end; the clutch with only approximately 1/2 in. of free play before total engagement. When the engine was fired up, we were further dismayed to discover oil belched from a stripped banjo bolt at the head; valves rattled in loose guides; blue clouds poured out of the stern once

the engine warmed up; oil bubbled around several headnuts; a broken temperature gauge; dangerously leaking SU carburetors proved untunable and the choke with broken wire was functionless; the distributor was worn to a degree that the timing varied widely as a function of engine speed; the oil filter leaked furiously once the oil was warm; the tachometer was broken; the generator eye bolts had broken through and refused attempts at welded reattachment; the radiator thermostatic control was functionless; and the side nuts on the radiator were frozen, and they stripped when we attempted to remove the radiator; the heater control arm had its little sliding nut missing so that the heater was unregulatory. Not that all these problems emerged within a period of 3 weeks, but their entire scope proved dismaying even to the most enthusiastic new owner whose principal interest was buying an all fibreglass car. In fact, the unrustable virtues of the fibreglass had proved the only unaffected aspect of the car. I suppose that it is only fair to say, however, that at least the windshield and rear window were not broken, the gears shifted without binding or slipping, the windshield wipers moved together, and the car had its full complement of equipment save for the missing quarter window. Most important, detailed inspection revealed the structurally crucial portions of the fiberglass shell were completely intact with no cracks. A whimsical note was provided by a surviving Ecurie-Shirlee service sticker still intact on the doorjam.

Systematic restoration of the car to the state shown in the previous owner's Road & Track photo has been achieved over the period from December 1971, the work proceeding alone, in cooperation with, under the tutelage of, and at times by the hands of freewheeling Pat Goodman, formerly of the Pit Stop, Rockville, Maryland, and presently director of the Summit Point Speedway, Don Tingle and Mike Smith of Tingle's Lotus Center, and the Bergstrom Body Shop, and King's Upholstery, all of Watertown, Mass. Sometime in 1972, the hours spent on the Elite passed the cumulative total put into the long-sold and all-but-forgotten Porsche.

A few admonitions from our experience might prove of value to those still laboring under the same impression I initially had that the laconic style of the shop manual means the individual jobs on the Elite are easily accomplished.

1. 40 DCOE Weber conversions require smaller jets and chokes than the standard Elan settings for reasonable gas economy and low end torque. The Elan metal gasoline linkage works well but involves relocating the main cable from the battery for the left-hand models. A small stud at the down pipe permits the use of the Elan-type sliding-sleeve pedal control of the throttle linkage; alternatively, the cable-pull pedal control method can be used by ordering the Super Seven linkage from Caterham Car Sales in England (pay no attention to the letter in a recent Road & Track complaining about Caterham ... just send a hefty deposit and wait). Forget the choke cable unless you can get one over 4 feet long (also a Super Seven item).

2. Follow the Climax recommendation quoted in a recent newsletter for seating the rings or be faced with another teardown due to uncorrectable blow-by. Although the shop manual says to fit a new head gasket only if this old one is bent, fit a new one anyway.

3. The new extra large valve guides for the head will not permit the old bushing for the valve springs to fit over them; an 18 mm socket can be used as a "suitable drift" to knock the bushings over the new guides.

4. Removing the oil filter can be extremely unpleasant and - unless one has the proper Climax gasket - nearly impossible to keep free of leaks. A method that works well is to convert the studs on the engine case to bolts and remove the oil filter as an entire unit, cutting a fresh gasket for the interface between the oil filter and engine case each time the oil filter is replaced. This manoeuvre enables reassembling the filter upside down in a vice, where seating the gasket for the "can" is easier.

5. Any old-style Mercedes coolant system by-pass thermostat will work, from Mercedes 1954-1960 models 180-220, but not that used on the 300.

6. Lucas has stopped manufacture of the Climax FWE distributor but claim - by letter - they will attempt to repair the old one if sent to them in England.

7. Warneford filters fit over the Weber carbs but just barely, and increase the idle jet richness about one f number.

8. Radiator removal requires a super-thin open-end wrench, ground down on either side to permit the head of the wrench to engage the inboard nut between the radiator shell and the strut supporting the radiator stud. Failure to use such a wrench in radiator removal may prove fatal in turning and breaking the stud mounted to the side of the radiator and make yet another radiator replacement your fate.

9. The Jaguar thermostatic bulb which fits the radiator does not come with the gasket as a routine portion of its kit. It is important that some gasket be used to interface between the bulb and the wall of the radiator, lest - as happened to me - enthusiastic tightening of the tiny nuts wrings off one of the tiny studs and produces a permanently leaking radiator, repairable only by welding a blind plug over the site of the bulb, or by replacing the radiator. I suggest instead one of the Kenlowe fans which has its ^{own} thermostatic control unit in the form of a banana-shaped sensor which can be installed through the rubber tubing directly into the radiator and has the advantage of being thermostatically adjustable through a rheostat switch which can be installed in the engine compartment and contains an override lighted switch to be installed inside the car under the dashboard. The kit can be obtained through Kenlowe in Maidenhead, England or through Caterham Car Sales.

10. The Smith's radiator fan is available as a direct replacement but might be preferable supplanted by the Kenlowe fan which appears to me to be similar dimension, although I don't actually know the exact measurements. The Smith's fan at present cost approximately \$28.00.

11. The steering rubber u-joint is Volvo replacement, but should be installed with the wheels of the car straight ahead; two people are required for the job, one to see to it that the steering wheel inside the car is properly aligned, and the other to force the u-joint over the steering rack; in left hand drive cars, this job is particularly annoying since the steering column can only be worked with after the oil filter has been removed.

12. To remove the front shock mount upper bolt, a small hole drilled in the fibreglass immediately behind the position of the bolt from within the engine compartment will facilitate knocking the bolt through; a sabre saw may be required if - in our case - the inner shock steel bushing has through years of rust frozen itself to the shock mounting bolt.

13. Be sure the front stub axles are installed on the correct side, lest one's wheel work loose. Koni shocks are available and, while firm, are comfortable, front and rear.

14. Be slow to disassemble the brake calipers, as replacement pistons are not always readily available.

15. Gas tank replacement requires approximately 3 people and it is a good idea to pinch the gas line hose at the engine end of the car prior to attempting to remove the gas tank from the trunk. Please do not forget to reseal the tubing from the monza quick-fill gas cap when reinstalling the gas tank, lest an over-zealous gas station attendant fills the tank to the level of the tubing and through it half fills the trunk with gasoline.

16. At least 2 people are required for the removal of the differential but 4 are preferable since our old enemy bolt-rust tends to freeze nuts in position and may disturb the delicate fibreglass sleeves through which the differential is bolted to the fibreglass chassis.

17. The hand brake return springs which mount against the differential case can be seen easily in the shop manual drawings but not once the springs have been removed and the differential case bolted back up against the car. It is strongly advised to attach the diff case end of the return spring for the hand brake to the diff case itself prior to reinstallation of the diff in the car to save many long frustrating hours searching with one's bare hands for the pin holes on the diff case through which the return springs hook.

18. The Fiat D 600 transaxle bearings fit the series II but not series I outer rear bearings. (*REAR WHEEL BEARINGS*)

19. The Triumph 3.9:1 diff gears fit nicely and are available at least through 1971 from the Spitfire.

20. In repairing the damaged fibreglass, we (Bergstrom Auto Body) found more than 8 paint jobs in the car, necessitating a complete stripdown to the basic glass for full repair, and required a new gelcoat and finally paint. Stress cracks can be reduced and better finish result from acrylic lacquer. Undercoat reproduces the black crackle finish on the interior nicely when sprayed through a gun, and dries in about a week. Be slow to remove the door trim and locks, as rust may have frozen them to a degree that fibreglass bobbins turn when forced out add considerably to the repair time re-glassing the bobbins. The trunk rear panel is worth strengthening in double fibreglass; label the wires carefully before disassembly.

21. Gray carpet is hard to come by and flat black matches the interior nicely. The seat foam is unique and best reinforced before re-stitching the seams and/or replacing panels (King's Upholstery, Watertown, Ma.). The inner door shells are virtually unavailable and are a real bear to reupholster.

22. The Elan door surround available as a replacement item from Lotus suits the Elite quite nicely but is sufficiently thick that the quarter window cannot be easily opened with the door closed against the door surround.

23. Installation of and working with components on the dash are best accomplished by first removing the tachometer, which will then provide a good hand hold for front and back approach to the dash.

24. The Lucas half-shade caps for the rear license plate lights are no longer easily obtainable and are difficult to make. However, the same unit that is used as a front parking light will accept these shaded caps and if the original caps are kept the light assemblies themselves can easily be replaced.

25. Blown bulbs alone may alter the pattern of light groundings with some bizarre effects; check the bulbs before tearing out the wires now and your hair later.

A few anecdotes of ownership may bring a smile of recognition to the other owners. Approaching a traffic light at 40 mph the first time out with the still-frozen brakes, I was dismayed to feel the pedal give way and thump on the floor, having broken the master cylinder seal with complete loss of brake function. A group of ladies walking in an adjacent parking lot were scattered as I made a sharp right hand turn, trying to get the car to stop by switching the engine off and jamming the gear into first, non-synchromesh be damned.

Long after the complete brake overhaul, tooth-jarring vibration was still a problem despite having replaced the rear half-shaft u-joints. We came to the realization that we would have to remove the driveshaft to inspect the unvisualizable front universal joint since this was suspected to be the culprit. The shop manual description made the job appear relatively easy "Remove tank as outlined in Section M7 and differential unit in section J. The shaft can now be removed from the car downwards and rearwards." That sentence roughly translated might better be phrased "Having decided to continue as an Elite owner, be prepared to disassemble the entire rear half of the car: Set aside several evenings and late nights, contribute a dozen skinned knuckles, two twisted

necks, unmeasured amounts of fluid dripping in the face, sacrifice several friendships, exhaust your supply of profanity, and, during your labors, contemplate the various means by which physical torture of Colin Chapman might bring home to him what section M7 and J really mean." The universal joint was found to be completely destroyed with the cross lying loose in the yokes.

Apart from the unanticipated amount of work required for restoration of our Elite, we are absolutely thrilled with it now that it has been restored to what I presume might be better than an original factory condition, save for the ill-seated rings and leaking main seal soon to be put right by Doug Frazer. The temptation for other Lotus products has proved irresistible, and we have also acquired a 1967 Europa Series I (fixed window model) chassis 460255, and a 1962 Cosworth Super Seven Series II America. The Europa has been converted to one 45 DCOE Weber but uses the stock exhaust and Maserati air horns, alloy wheels, Cibie lights, etc. have been fitted on both cars for safety. The Europa was in daily personal use while the Elite was being restored, alternating with the Seven, during the warm weather.

Although all "unmistakeably Lotus", the 3 cars have distinct differences, many of which are evident by the table of comparison data in this report. The data are drawn from the Motor, Road and Track, Car and Driver, and the Shop Manuals. No data on the Weber-converted Europa has appeared but there was a considerable improvement in performance by conversion, justifying the greater/less signs for acceleration, BPH, and Torque figures taken for the Solex-equipped Europa tested by R & T. To compare the cars in other parameters seems a bit unfair, as they were each designed with completely different purposes in mind, but the following comments relate to their plus and minus points for daily driving (more than 40 miles/day average) in city, freeway, town, and country lane conditions, including the stoplight grand prix.

All 3 cars start and idle without difficulty. None has major maintainance problems but all require constant attention to the effects of vibration on nut and bolt conditions throughout the car. Fuel economy is excellent. Their beauty and rarity attract more attention than desirable, making them all somewhat of a liability when parked unattended. I drive a 1957 180 diesel Mercedes whenever parking in unknown street situations is required, which is a real drawback in the versatility of Lotus cars.

SUPER SEVEN In good weather, with the top down, careless driving, off the road, no protests from neighbors about the noise, and a drive of less than 50 miles planned, There is no car remotely like the Seven. Its acceleration, close ratio gears, ease of modulating the controls and cornering - even with the Goodyear G800 tires - easily exceed the Europa and Elite, and its size conveys a race car sensation. But long mileage is uncomfortable with the thin seat; bad weather requires the top, and the poor visibility hot cab, thundering exhaust, and worry about being noticed by others makes the experience miserable; in winter, the low road clearance lets ice lumps pose a hazard and the heat in the cab fogs the windshield badly. Of the 3, it is the car least used but the last that would be put up for sale.

EUROPA In all but the worst weather, the Europa is hard to beat for all around use. It has tremendous visibility (180°) in front of the driver, 2 Talbot wide angle mirrors take care of the rear quarters, and the cab mirror gives good visibility straight back. The seat position is a vast improvement over the Seven and even the Elite and makes cruising for hundreds of miles (in pre-shortage days) a pleasure. The Europa - Weber equipped - is flexible enough, acceleration adequate, and handling very neutral, so neutral that tire breakaway needs be learned carefully lest one sweep ends in overzealous cornering, particular in the rain. Braking is superb and reliable although the front pad squeals after a lot of heat has passed through the radiator into the disc/pad. Adequately "re-manufactured" by a diligent owner, it is waterproof, and

with proper horn and lights, can fare equally in traffic with the mastadons. All together it is really the ideal car, except for the annoyances in entering and leaving, but mostly for the incurable noise level and relentless vibration. The noise and vibration detract from using the car's upper end rev limits, and make it the most annoying - by contrast to what it might be - of the three. After having driven all the Europa models, including the 5 speed special, I prefer the Series I (fixed window - not the Series I, Mark I - removable window) for its appearance, handling, comfort, and when Weber modified - performance. When favorable circumstances and recent work conspire to eliminate vibration for however short a time, it is unquestionably the most satisfying car I have driven.

ELITE Has a favorable comparison in performance, comfort, handling, weather, worthiness, between the best of the beautiful, compared with the stark and functional appearance. It has more advantages and less disadvantages than either of the others, and is thus more versatile a car than either of the others. Its advantages need not be stressed to Club Elite Members - the only drawback I know is that its great rarity makes one cautious in using it too freely in the hazards of daily driving situations.

	Super Seven S ₂ 1962	Elite S ₂ 1962 ²	Europa S ₁ 1967
Year			
Chassis and body			
length	10.9 ft	12.0 ft	13.17 ft
width	4.75	4.8	5.38
height	3.58	3.8	3.58
wheelbase	7.33	7.33	7.58
curb weight	1064 lb	1344 lb	1400 lb
wheels	Pearce alloy 13x5 in	Wire 15x4.5 in	Cosmic alloy 13x5.5 in
tires	Goodyear G 800	Pirelli CF 67	Gislaved speed 116
brakes	9 in disc front 7x1.25 in drum rear	9.5 in disc front 9.5 in disc rear	9.75 in disc front 9x1.6 in drum rear
Acceleration			
0-60	7.7 sec	10.7 sec	<11.2
1/4 mile	15.7 sec	18.5 sec	<18.2
speed at 1/4 mile	80 mph	78 mph	>76
Engine			
type	4 cyl OHV	4 cyl OHC	4 cyl OHV
bore and stroke	80.6x72.8 mm	76.2x66.6 mm	76.0x81.0 mm
cc displacement	1498	1216	1470
compression ratio	9.5:1	10:1	10.25:1
BPH at RPM	95 at 6000	95 at 7250	>82 at 6500
torque at RPM	95 at 4500	82 at 4900	>80 at 4000
carburetor	2-40 DCOE Weber	2-40 DCOE Weber	1-40 DCOE Weber
Transmission			
final drive	4.11	3.91	3.66
1st	2.9	3.67	3.61
2nd	1.7	2.20	2.21
3rd	1.28	1.32	1.48
4th	1.00	1.00	1.03

<u>Chassis No.</u>	<u>Body</u>	<u>Engine/Gearbox</u>	<u>Engine No.</u>	<u>Axle</u>	<u>Date</u>	<u>Customer</u>
316	Le Mans	FWA 1100 Stage II	7121	De Dion 4.5	13.5.57.	M.G.D.Graham
317	Le Mans	Own engine		De Dion 4.5	20.7.57.	Dickson
319	Sebring	FWE 1220		De Dion 4.5		Dickens
320	Le Mans	1100cc MG'A'		De Dion 3.9	17.6.57.	Team Lotus
321	Le Mans Special '57	1100 FWA2	7128	De Dion 3.9	17.6.57.	Green
322	Le Mans Special '57	1500 FPF MG'A'	FPF 1017	De Dion special 3.2	17.6.57.	Le March
323	Le Mans Special '57	750 FWA		De Dion 4.9	17.6.57.	Wyllie
324	Le Mans Special '57			De Dion	17.6.57.	Scatchard
325	Topkit	Stage II FWA	7108	De Dion 4.5	1.8.57.	Towse
327	Topkit	Stage II	7193	N/M 4.5	16.9.57.	Mackie
328	App C	Stage II FWA 1100	6978	De Dion 4.5		Jones/Zanis
329	Le Mans	Stage II FWA 1100	7261	De Dion 4.5	25.11.57.	Martyn

<u>Chassis No.</u>	<u>Body</u>	<u>Engine/Gearbox</u>	<u>Engine No.</u>	<u>Axle</u>	<u>Date</u>	<u>Customer</u>
330	Eleven	1100 FWA	7310	De Dion 4.5	4.12.57.	Prior
331	Le Mans	Stage II	7192	De Dion		McKay
332	Series III	FPF MG'A'	1017	A.90	12.9.57.	Carroll Shelby
333	Series II	Stage II 1100 FWA	7127	De Dion 4.5	20.12.57.	Van Wyman
334	Series II	Stage II FWA 1100	7190	De Dion 4.5		Turnbull
335	Sports	Own 100E		N/M 4.5		Miles/Andrews
336	Le Mans	Stage II FWA 1100	7258	De Dion 4.5		Copeman
337	Series II Eleven	1100 FWA	7257	De Dion 4.5	23.11.57.	Escott
338	Series II	Stage II			16.11.57.	Ireland
339	Series II	Stage II 1100 FWA	7318	De Dion 4.2	6.2.58.	Sebring 3
340	Series II FWPS	Stage II 1100 FWA	6967	De Dion 4.5	22.11.57.	Riley
341	Eleven	Stage II 1100 FWA	7306	De Dion 4.5	7.12.57.	Templeton
342	Le Mans	Stage II 1100 FWA	7201	De Dion 4.5	26.2.58.	Showcar

Case No.	Case No.	Invoice No.	Date	Name	Other
1521	9070	ELC 875 RK 50867	14/11/60	Jay Chom...	
1522	10644	EK 50538	28/6/62	G. E. Thorne	
1523	9005	ELC 871	18/11/60	Jay Chom...	
1524	10234	RK 50267 EK 50165	11/1/62 6/3/63	H. J. ... Eddie Shore	
1525	9133	ELC 1179 ELC 917	9/12/61		
1526	9072	ELC 914	22/1/61	Eddie Shore	
1527	9136	ELC 895	24/12/60	L. B. Flood	
1528	10233	RK 50178 EK 50181 RK 50430	24/1/62	R. N. Vernon	
1529	10377	EK 50315	15/3/62	H. A. Yone	
1530	10660 10567	RK 50722 EK 50493	24-5-62 14/3/63	J. J. ... Hanni	G. F. ...
1531	9125	ELC 1182			
1532	10479	RK 50651 EK 50398	1/5/62	J. Harrison	
1533	9181	LC 1587	7/3/61	Cheq. Flag (Comp. Cars)	let
1534	10236	EK 50145	10/1/62	W. Moss	
1535	9053	ELC 912	2/1/61	Eddie Shore	
1536	9172	ELC 1179 EK 912	6/3/63 2/1/61	Eddie Shore Eddie Shore	
1537	9543	RK 50199 EK 50131	22/12/61		
1538	9726	RK 50409 EK 50270	1/3/62	H. P. Clow	
1539	9255	ELC 914	20/1/61	Eddie Shore	
1540	9340	EK 50131 EK 50068	5/12/61	L. ...	
1541		RK 50280 EK 50280 RK 50763	20/1/62	J. ...	
1542	10583	EK 50496 ELC 1162	3/5/62 14/12/62	J. Horton J. ...	
1543	9354	ELC 912	18/1/61		
1544	9337	ELC 765 ELC 11807	20/4/61 22/3/63	F. Li PAGANI	
1545	9263	ELC 11805	22/3/63	F. Li PAGANI	
1546	9190	ELC 915	17/1/61		
1547	9351	ELC 925	14/1/61	Pat ...	
1548	9625	EK 50320 RK 50304	21/3/62	A. L. ...	
1549	10265	EK 50206	3/2/62	E. Clapton	
1550	9041	ELC 894	20/1/60	Chequered Flag (Comp. Cars)	
1551		RK 50710			
1552	10569	EK 50460	16/5/62	W F Trumb	
1553	9722	RK 50487 EK 50320 RK 50763	10/3/62	J. ...	
1554	10477	EK 50483	28-5-62	J. Horton	
1555	9121	ELC 918	9/3/61	Eddie Shore	
1556		ELC 1060	22/2/62		
1557	9175	ELC 914	2/1/61	Eddie Shore	
1558	9369	RK 50123 EK 50066 ELC 9172	9/10/61		
1559	31	EK 5027	17/1/62	L. ...	
1560	9724	RK 50340 EK 50333	14/1/62	F. ...	
1532B	10813	ELC 1206	13.6.63	Spanhe.	
1532C	10832	ELC 1219	2/1/63		

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