

CLUB ELITE OF NORTH AMERICA
(Affiliate of Club Elite of Great Britain)

Volume 1, No. 2.

March 29th, 1971.

Dear Club Member,

As of this date, there are twenty eight paid up members of the Club and our bank account at The First Trust and Savings Bank, Clarksville Tennessee stands at \$140.00. Barbara and I have absorbed all the expenses of the Club since January. Mailing has been the most expensive item for we have been sending out the newsletter to every prospective member rather than just paid up members. In future we shall send out the newsletter only to people ^{who} have paid their \$5.00 dues. Lotus West bills all members at the same time each year making bookkeeping easier and we may do this also with a billing date next year of April, and new members can be billed 50¢ for each remaining month in the year they ^{589T#} join. Membership in Club Elite includes the wives, so send along their names when joining. Next month we will publish the Club Membership List. The Register now stands at 80 members.

Larry Dent, R.K. McKernon and Ronald Frahm have sent us names of Elite owners not on our list. We are grateful and are sending this newsletter to these persons in hope of encouraging new membership.

Letters are coming in thick and fast these days, so please be patient for a reply. We are answering all the letters and sometimes a letter can be handled by publishing a note in the following newsletter, if an item of general interest has been raised. If a reply is urgently required, please enclose a stamped self-addressed envelope.

Tom Sargent is interested in knowing how many of Club Members and Register Members have cars with L.H.D. I don't have this information on many members, so if you get a chance drop this Club a line stating: L.H.D. or R.H.D.

Thanks to Club Member, Truett Lawson, for giving the Club three complete magazines with Articles regarding the Elite. 1963 Road and Track road test; a test of Peter Lumsden's Le Mans winning Elite from Sports Car Illustrated 1960 issue; an article from Car and Driver on one man's kit Elite called "The Lotus that came in a crate". We will copy these articles for the newsletter in future, and we have taken another article from the 1960 Sports Car Illustrated this month regarding the modifications necessary to bring an FWA 1098 c.c. Climax to Stage III, which is also the same procedure for modifying the FWE.

This brings us around to racing - we received a very nice letter from Larry Dent of Churlee Race Team, Fort Wayne, Indiana, who was referred to us by Club Member Ronald Frahm. We publish this letter below

" You keep referring to me in your newsletter, so I thought I would drop you a line. As you say I raced an Elite and have owned several others.

I was 3rd in the SCCA National Championship in 1965 in CENDIV after leading the series all summer with my Special Equipment Elite. I turned the car over at Daytona during the 1965 ARRC while running third.

I purchased the car from Max Narrier in Canada. It was a factory prepared car purchased from the works by Max in about 1963. The car is now owned by Garry Hoffman, 1527 Drexel, Fort Wayne.

This was a most unusual Elite since the factory had fitted Koni shocks, adjustable rear suspension, ride height adjustment in the rear and several other little trick items that I never found on any other Elite. It has alloy callipers front and rear, ZF box and diff. Stage 3 engine with Webers, cold air box, NACA duct to the air box, reinforced suspension mounting points and very thin body sections. The car weighed just over 1,300 wet with wide rims and racing tires, complete with bumpers, and full trim. I never gutted the car for lightness and I guess I could have taken out another 75 pounds had I really tried.

I guess I know as much about competition preparation on an Elite as anyone in the country, so if anyone wants to pay for the 'phone call, I would be glad to tell them anything I know (or can remember) (Area Code 317, 405, 5971).

I completely restored an Elite last year and it is now owned by Brent Kelsey also of Fort Wayne. Very nice car, series two, standard trim and equipment. The last Elite I had was built up from left over parts, etc. from the items remaining after the Marke was discontinued. It is registered as a 66 I believe, and as such is likely to be one of the newest cars of record in the States, even though it well may have been made much earlier (the parts that is). I had to obtain a serial plate and just invented a chassis number since there never was one in existence. I used the number that I had run on the Elite race car (79) so the chassis number was something like EB 7979.

That one would surprize a lot of people I am sure. The car is now owned R.J. Henry of Fort Wayne. He is the former SCCA Governor and race driver. This car was fitted with an FWB engine by myself, ZF box, special equipment interior. The FWB long stroke (1500 cc approx) engine really makes a nice package, the car is original in appearance and has much more power and torque than an FWE engine.

Elite parts from the factory are very few now. I purchased the last bumpers they had several years ago. Fiberglass dupes are available and look quite smart when painted over with a no flake, acrylic silver.

Just an added note, the top speed of my racing Elite was about 130. Quite fast 1220 c.c.

As a point of little interest, I am still most active in competitive driving. This coming year, I will be driving the B.F. Goodrich factory car, The Tire Bird. I also drive the Curlee Special for Curlee Clothing Company of St. Louis.

Kindest Regards - Larry Dent. "

Climax first produced the FWA engine 1097 c.c. or 67 cu. in. Bore 2.85" and stroke 2.625". They then produced the FWB unit, 1460 c.c. and 89 cu. in. They ^{used} most of the same components of the FWA except the block was cast to accept a 3.00" bore and a new crank was forged with a stroke of 3.15". The FWE is a hybrid using the FWA crank and stroke and the FWB block and bore. All use the FWA head. The FWE has 1220 c.c. or 74.25 cu. in. and a bore of 3.00" and stroke of 2.625". *

Club member Eric O. Lynch would like information or suggestions on the best way to mount his roll bar. If anyone has any suggestions please let us know and we will pass on the information and publish it for general information.

Eric Lynch has expressed a keen interest in preparing and racing his Elite. In fact he is attending the Jim Russell Racing School this month. Also, Club Member Major D.R. Bennett of Washington, D.C. says his competition license is getting a little dusty. So we are encouraged to hear that the Elite may be campaigned in 'E' production this year by a few members.

In fact we are so glad to hear this news, that I am making a personal offer to encourage the trend. I will give \$50.00 worth of new Climax parts to the Club Member campaigning his Elite in the most SCCA races and reporting on his results to the club after each race; where he finishes does not matter. Furthermore, I will give \$50.00 worth of ^{new} Climax parts to the Club Member gaining the most SCCA points this Season and again reporting his results after race. So some Club Member with any luck would pick up about \$100.00 worth of parts (retail value) after the 1971 season is over (new set of pistons). Would any Club Member be interested in offering a few dollar (\$5.00, \$10 - anything) as an incentive to members wishing to race. Perhaps the Club would be interested in sponsoring the member ^{most} successful this year in a racing program for 1972! This way we could follow the complete preparation and racing throughout the season and share his success and failure with little invested per member. 8262#

2L7T#

PARTS FOR SALE : If you have any spare parts you want to clear out, list them and please price them for insertion in the newsletter each month. FWA reground crank for sale by D.S. Sammis, Jr. RR # 3, Fairground Road, Zenia, Ohio. 45385. no price.

PARTS NEEDED: Accelerator Cable required by Bill Kline, of 2109 P Street, Bedford, Indian 47421.

Lotus East has a racing Elite for Sale. We will not make it a policy of advertizing Elites for sale as we all have Elites and there seems to be plenty available through magazines and papers. However, this does seem to be a rather unusual car, and Club policies can be flexible. If you are interested, you can contact Mr. Phil Mahoney, Lotus Division of Duchess Auto Company, Millerton, N.Y. 12546. Mr. Mahoney tells me "It has 10,000 racing miles and is still going strong. It hasn't been run in a few year but has the stage 5 engine with webers, mag. wheels, etc. I think I have some long range tanks up in the attic for it. It was repainted a few years ago, red, put in a corner and covered up. The car is in just about mint condition and is full road legal. The only thing about the car which isn't mint, is the upholstery which was removed for racing. The price is \$3,000." Mr. Mahoney also has five Elite Workshop manuals for sale at \$19.25.each.

Places to Buy Parts - Lotus East, Division of Duchess Auto Company, Millerton New York 12546. (914) 789-4425 - Phil Mahoney. 2. Premier Imports Ltd. San Carlos, Calif. (415)593-1411. - Bill Gillis. they Both of these firms have a few odds and ends left over from days when stocked Elite parts. Lotus East have two extra large fuel tanks still available. Mr. Mahoney seems very helpful. I do not think Mr. Gillis has a complete inventory list made up on the parts left in his stock. I would suggest ordering c.o.d from either company.

Regarding the shop manuals, we heard from Classic motorbooks that they will give us 20% off on large orders of shop manuals priced at \$12.00 retail, so if you need one drop me a line and I will order the number desired on a group purchase. They admit their stock is low at present, so shipment may not be immediate.

INTERCHANGEABLE PARTS: A monthly feature of this newsletter will be a list of interchangeable parts, and we will start this next month. D.S. Sammis, Jr and Robert W. Green have offered to help compile and catalog parts lists and this will eventually be available to Club Members. Please send us in any information you have regarding interchangeability, so that we can publish it. You should list the car from which the part comes from and the part number for that car.

Z.F. GEARBOX. I have obtained a manual from the Z.F. Company, with parts numbers and diagrams. If anyone wants to obtain parts from the company, the address is given below. If anyone requires an item for their gearbox and does not know the part number, I will be glad to supply this information if they describe the part.

Zahnradfabrik Friedrichshafen AG,
7990 Friedrichshafen
Postfach 307
Germany.

EMBLEMS: It has been suggested that Club stationery would look rather well and a Club Emblem. If any of our artist members would like to design a letter heading and an emblem, we should be glad to receive their suggestions.

On the other pages we have attached details of modifying the FWA to Stage III, another anecdote from the English Club, and some helpful repair suggestions via Mr. Green and an English Member.

Best Wishes,

Barbara and Bill Hutton.

P.O. Box 351
Clarksville,
Tennessee 37040.

The following^{is} the story of how John Nicholls took his Elite to Nurburgring and Le Mans during his Summer holiday. (Mr. Nicholls is a member of the English Club Elite)

"After our 1969 Continental holiday, I was very proud of the fact that we completed the 3,000 mile trip, opening the toolkit only to open a reluctant bottle of wine! However, luck was not entirely on our side this year!

The first 1000 miles went off without incident, including three very enjoyable laps of the Nurburgring at 13.5 min per lap (only one minute slower than the test-driven VW Porsche 914/4's which were there that same day). Then - en route from our hotel to the Francorchamps circuit for the Belgian G.P. practice, when we were motoring along the Autobahn at about 110 m.p.h. all hell let loose under the bonnet - a quick switch off and out of gear and we pulled into the side.

I opened the bonnet to look for the hole in the crank case (well it sounded like that!) but nothing was to be seen. A check of the dip stick showed that the oil was alone in the sump and the water still where it should be! Removal of the plugs showed nothing except burnt fingers, and on peering into the plug holes, all the con rods appear to have their pistons still attached. A touch of the starter proved that the entire engine would still turn, but a (now gloved) finger poked in 'Number 4' plug hole discovered a distinct lack of compression. I replaced the plugs and with a still shaking hand, turned the key. The engine fired at once on about 3¼ cylinders, but with no undue noise. There seemed to be a lot of compression escaping the crankcase breather - could it be small hole in the piston? With only 1 hour to go before the start of practice for G.P. we moved off and drove slowly to the circuit.

In the stands we introduced ourselves to Dennis Jenkinson and discussed our problem with him. He thought that a holed piston was not possible as we had driven about 40 kms. after stopping on the Autoroute, without it getting any worse, and that a bent valve was more likely to be the trouble. This cheered me up as I had a couple of spare valves so we sat back and enjoyed practice on this fabulous circuit.

In the evening we motored back to the hotel - about 40 km. from the circuit and planned the following day. Practice was due to start at 3 p.m. so we drove to the top of a hill, at the bottom of which was Spa town on one side and the circuit on the other - the plan being, to be able to free wheel in either direction depending on our needs if we could not get mobile.

The next day was beautiful and with tools laid out on a large plastic sheet, I soon had the head off. All four pistons were intact - so at least we could carry on to Le Mans the following week. The next step was to remove the number four valves, but the only sign of a possible fault was a small mark on the exhaust valve. The spare valve fitted and the valve clearance was checked and the (almost) correct shim was located by means of an adjustable spanner and feelers in place of a micrometer (well, you can't remember everything). The head was replaced and within 4 hours of arriving at the spot the engine was running, but still not completely on four cylinders. "Maybe the replaced valve will seat better when it has been run a little." We packed up again and went to the circuit to watch the second days practice in very hot conditions. On returning to the car, I was not over pleased to discover that the brakes which had been a bit spongy, were now completely non-existent! A slow drive to a quiet spot and "You pump the pedal while I go under car - they only want bleeding" "Lots of air coming out, how's the pedal feel?" "It must be the master cylinder then.....Wonder where you get Elite Master Cylinders in Belgium?"

As it was now time to get back to the hotel, we set off, knowing that if I pumped the pedal 20 times, we could stop. The road was straight for miles at a time and we were cruising at about 50 when I realized we were back on all four cylinders again "That valve must be seated o.k. now".

It was not until I removed the head on returning home that I discovered the real cause of our lost compression. The noise was caused by Number 4 piston attempting to seize and had I not switched off at once, it would most likely have wrecked the engine. The reason for this still remains a mystery as we had only driven about kms and the engine was not over heating. The piston has scored and clamped the rings and now they were free again.

At this stage in Belgium, however, we still had no brakes, but we arrived back at the circuit safely to watch one of the best races I have seen in 18 years of following motor sport. A visit to the Paddock after the race produced a master cylinder for a Lotus Elite!! And half an hour later, we had brakes again and Le Mans looked a lot nearer.

Apart from the temperature gauge ceasing to function, an air cleaner which fell off, a bonnet hinge pin which came out and a needle valve which stuck, we arrived at Le Mans without any further trouble.

Oh yes, on the way home, about 150 kms. from Calais we had to abandon the nearside exhaust pipe which made our progress sound most impressive.

In spite of our misfortunes, we had a great holiday, and in fact we were not delayed at all from our planned schedule. The Elite was greatly admired where ever we went and we met many people as a result of their interest in it.

We are now looking forward to next year's holiday for in Europe these beautiful cars can be motored as they were meant to be! "

The names and address of the people who have organized Club Elite in Great Britain and who produce the monthly newsletter are -

Mr and Mrs Michael Taverner
10 Woodlands Avenue
Rayleigh, Essex. SS6 7RD.

HELPFUL SUGGESTIONS: from David Hodgson of England comes details when water is in the cylinder due to dropped cylinder liners. " Mr. Denshaw of Climax advises that the liners should be .002 - .003 proud of the block. If this is not the case, it is perfectly in order to put a shim of the required thickness under the liner to raise it. The shim should not fit tightly around the liner or it will wedge in the radius on the flange. The garage which works on my car condemned this immediately as being a bodged job, but it would seem to be very much easier than machining the block."

Mr. Green from Pacifica, Calif, solved the problem of water leaking by the steel head gasket in this manner - " I was unable to obtain a new gasket, so I cleaned up the old one, sprayed both sides (three coats) with copper cote (a spray to renew copper bottom pans), let dry and installed head, torquing four times, after 4 warmup and cooldown periods. I've had no problem since with water leaks.

CLIMAX: STAGE III

The FWA Climax 1097 cc single overhead cam engine has long been the dominant power unit in international class G racing. These engines have been used in Lola, Lotus and Elva cars, and have more than proven themselves to be extremely reliable and among the least expensive units to maintain in high performance racing tune.

After several racing seasons with the little FWA still chugging along in its standard Stage II, the designers sought out ways to improve its performance. When they began producing the engine in a Stage III tune, few Owners were ready to throw away their then-obsolete Stage II units. We certainly couldn't afford it, running a team of Lotus Elevens, and as soon as parts became available we began our conversions. Those of you with Climax engines, might like to know just how this is done in a do-it-yourself fashion. There are two major phases; the block modifications and the head modifications.

BLOCK MODIFICATION: The major modification to the block assembly is the fitting of the heavy duty main bearing caps. The front and rear caps differ from the center one and may be recognized by their thickness; front and rear caps are 1.1 inches in width; the center one is 1.23 inches wide. With the caps in marked position and torqued to 450 lb.-in. the assembly must be line bored to 2.26875/2.26925 inches. When full balancing is completed, we may begin the short block assembly. In fitting the crankshaft, the end clearance must be checked. If clearance exceeds 0.010 inch, new thrust washers must be inserted. The main caps are then installed and torqued to 440-450 lb-in. Crankshaft clearance on the mains is from 0.001 inch to 0.00275 inch.

In disassembly, you may have noticed small marks on the front and rear inside edges of your cylinder liners. These have been caused by valve float in the high rpm ranges. This will be extremely dangerous in the Stage III engine so you must file relief notches 3/32 inch deep on the front and rear inside edges of your liners, approximately one inch in length.

Before fitting the new Stage III piston and rod assemblies, it is necessary to check the small-end bushes and ream them in position to 0.750 ± 0.0002 inch in diameter. When fitting the wrist pins, warm the pistons to 80° to 100° C for ease in assembly. This can be done by placing each piston in a pan of boiling water or by placing a torch gently over the entire crown of the piston until the spit will boil off.

For sprint racing, we recommend a looser ^{fit} of the pistons to eliminate excessive friction in higher rpm ranges, and also as partial protection in the event of overheating the engine. Piston clearance at the thrust face should vary from 0.007 inch at the top of the skirt to 0.005 inch at the bottom. Compression ring end gap: (in position in the cylinder liners) 0.013 inch to 0.020 inch; oil scraper ring; 0.012 to 0.014 inch. The piston rod assemblies are now fitted to the crankshaft and torqued to 230 lb-in. Big-End clearance: 0.002 inch to 0.0035 inch. After several rotations of the crankshaft to ensure freedom of movement, the remainder of the short block assembly may be completed.

HEAD MODIFICATION: The head modifications that give us an increase in power output necessitate the use of a fine machine shop and a few hours of dedicated patience. We shall for simplicity do this in the following stages.

- a. Assuming you are now running standard Stage II compression, it is necessary to shave .040 inch from the underside of the head to increase the compression ratio to 10.5 to 1. It will then be necessary to use packing washers - sized in relation to the amount of the head cut - underneath the tappet block to retain tension on the camshaft driving chain and also to ensure correct valve timing. We now use super-premium because of the higher compression. When the race organizers give away gasoline, we take what we're offered, but the rest of the time we try to get Atlantic Imperial or Esso Golden Extra.
- b. With the new five main bearing camshaft and tappet block assembly, larger and stronger valve springs are used. The existing valve spring cup recess in the head must be enlarged.

- C. To remove and replace the valve guides, the head should be heated to 150° C. This is 300° F and if you are doing this part of the job at home, you can use the kitchen stove. If not, play an acetylene torch over the entire head (don't hold the flame at one spot) until you can get the old guides out with gentle taps. Use a drift 0.5 inch in diameter which will allow free passage through the valve guide bore. The new bronze guides are then inserted. The correct amount of projection is 0.350 above the machined valve spring cup recesses in the top of the cylinder head.
- D. To change the exhaust valve seats, drill two holes 180° apart using a drill of a slightly smaller diameter than the radial thickness of the insert. A small chisel is then used to cut away the remainder of the valve seat. This must be executed with extreme caution so that machined surfaces of the valve seat recesses aren't damaged. This done, the head is again heated to 150° C and the new seats chilled for ease of installation. Finally the exhaust seats are ground to 45° and then hand-lapped with a fine grinding compound.

FINAL ASSEMBLY: With these head modifications finished, we may now complete the assembly of the engine. If you have exceptionally smooth, flat surfaces on both head and cylinder block, you can try this trick; spray both sides of the head gasket with an Aerosol can of aluminum paint. Use enough to get a tacky surface, assembly the head and torque it to 240-250 lb.-in.

Torque the camshaft bearings to 160-180 lb-in and adjust the valve clearances to .005 inch intake and .007 inch exhaust. The spark timing remains unchained at 2 to 3 degrees BTDC. The factory puts a timing mark on the front pulley, but if your engine is not brand-new, there may be several there. If so, use a dial indicator on piston No. 1 or No. 4.

After starting, the engine should run about a minute and a half before filling the water system. This ensures a good seal at the head gasket. After the engine has run about 30 mins, stop it and re-torque the head bolts while it is still hot. After a few hours of running, check the tappet clearances, and adjust accordingly after the valves have had a chance to bed down.

PARTS REQUIRED:
Part Number

Description

Per engine
Quantity

SAFWA 2128	Piston Assembly	4
SAFWB 3061	Con-Rod Assembly	4
FWB 1120/2	Con-Rod Bolt Tab Washer	4
FWA 2006/5	Bearing Cap, Front and Rear	2
FWA 2007/5	Bearing Cap, Center	1
FWA 1005/7	Exhaust Valve Seat Insert	4
FWA 1024/4	Exhaust Valve Guide	4
FWA 1023/6	Intake Valve Guide	4
FWE 1013/7	Intake Valve	4
FWE 1021/7	Exhaust Valve	4
FWC 11213	Inner Valve Spring	8
FWC 1032/3	Outer Valve Spring	8
FWC 1022/4	Valve Spring Collar	8
FWC 1031/3	Valve Spring Cup	8
SAFWC 3052	Tappet Block Assembly	1
FWC 1007/3	Tappet	8
FWA 1548	Tappet Block Packing Washers	9
SAFWA 3060	Camshaft Assembly	1
FW 1018	Camshaft Bearing, Front and Rear	4
FWC 1019/5	Camshaft Bearing Center	6