

North Kent Lotus Group



Editorial.

Not for the first time, I have to start with an apology. My printing difficulties last month extended to my inability to ensure that the whole of Vaughn's article was on the page! The on-line version was fine, but the hard copies were incomplete and so must have appeared nonsensical to those of you who receive them. My apologies to you for that, but profound apologies to Vaughn for messing it up. I really am always very grateful for any contribution for the newsletter, so the least I could do is ensure that it is correctly incorporated.

May events started with Motors by the Mote at Leeds Castle, where we had a good turn-out of 9 cars. The sun waited until it was time to leave before it put in an appearance, so it was a rather chilly experience for the most part but a good event all the same.

A couple of weeks later was the Brooklands Breakfast meeting. I met Howard & Jenny for a very early start and an enjoyable run via (mostly) the A25 in perfect spring sunshine. We timed it about right because although we had to wait about ten minutes for the gates to open when we got there it proved to be a very popular event and I think the entry queue became quite extensive in a very short time. Waiting in a queue of Elans, E-Types and GT40's and the like never seems half as bad as being stationary on the M25.

I met Trevor B in the designated Club Lotus area. I know that others intended to attend but would be coming from various parts of the country, however he was the only NKLK member I saw apart from Howard & Jenny, so I'm not sure whether any others managed to get there. No doubt I'll get an update at the next club night.

In my opinion Brooklands warrants repeated visits, there's so much to see there, so combined with a full English breakfast, perfect weather and a fantastic collection of visiting cars it really was an excellent day out.

One of the forthcoming events is the Recharge Run to Dungeness. This one needs to be pre-booked, so please get in touch with Michelle asap if you wish to go.

Richard L has taken delivery of the new chassis for the Elan restoration, so I went along to see that and to see how work was progressing. Very rapidly is that answer to that! I'm looking forward to starting my restoration job, although it's unlikely to start before the winter, but I have to say that seeing all the component parts spread out, it is a bit of a daunting prospect!

My thanks this month go to Chris for providing an excellent report on our visit to Quaife Engineering. As ever, any contributions are gratefully received.

Contacts

Meetings: 2nd Wednesday, The White Rock Inn, Underriver, TN15 0SB

www.northkentlotusgroup.org

Visit to Quaife Engineering

Wednesday 19 April 2017

Eight NKLG members booked-in to attend this visit, but a little disappointingly only six attended. John U, John P, Mick P, Chris C Graham W, Roger D. (See the end of this report).

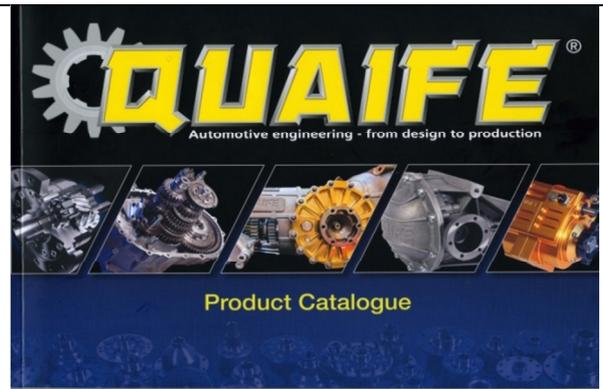
For those of you who know little about Quaife, I will try to remember some of the things we were told and briefly give you a flavour of what we were shown.

We were warmly welcomed by Dale Phillips, the Business Development Manager, who with great skill and enthusiasm gave us an introduction about the company and its history and showed us around the Quaife facilities. It was founded in 1965 by Richard Quaife and to this day remains a family business with daughter and son as sole directors. He made five speed gearbox conversions for Norton and Triumph motorcycles which proved very successful, both commercially and on the track, including victories at Daytona and the I of M TT. In the entrance foyer an exhibition of machines from this period were displayed.

Throughout the next three decades the company expanded into automotive applications such as automatic torque biasing differentials (ATB) which were highly successful and used in road cars such as the Maserati Ghibli, through to the F1 Benetton of 1986.

The 2000's saw the most rapid development in the company's history up until this time. OEM supplier status was a major step to worldwide production of the ATB in cars like the Ford Focus RS. The Quaife sequential gearboxes, introduced in this decade, have been very successful and remain widely used in motorsport today, particularly QBE60G and 69G Types.

Today the company operates with over 50,000 sq ft of space at Otford and Gillingham, where heavy and larger operations are carried out, and has over 80 employees. It has an increasing worldwide customer base, and an increasing variety of applications on land and sea.



Gearbox used in Lotus as a upgrade

Ford Rocket Type E Synchromesh Gearbox **QBE2Z/6Z**

Key features of the QBE2Z Ford Rocket heavy duty synchromesh Type E gearbox include:

- Straight cut, close ratio gears with synchromesh
- Precision Quaife mainshaft, beehive speeds and alloy case
- A full range of input shaft lengths for numerous installation options
- Optional alloy main case, Quaife alloy tail case and heavy duty operating block available
- Choice of optional gear levers available
- Full specification details, please see page 64-67
- Intermediate ratios available to order
- Donor box required
- Optional Quaife ATB & Tran-X LSD available

Key features of the QBE2Z Ford Rocket Type E Chelton synchromesh gearbox include:

- Straight cut, close ratio gears with synchromesh engagement
- Retains original Ford mainshaft
- Large choice of motorport gear ratios
- Choice of input shaft length for numerous installation options
- Alternative ratios available to order
- Optional alloy main case top cover and gear levers available
- Donor box required
- Optional Quaife ATB & Tran-X LSD available

QBE2Z Gear Ratios

1st	2nd	3rd	4th	5th
2.90	1.690	1.230	1.000	Rally set
1.040	1.540	1.230	1.000	Race set
2.790	1.690	1.650	1.000	Hot Rod set
1.830	1.380	1.540	1.000	Ultra-Race set
3.000	1.540	1.230	1.000	Rallycross set

QBE2Z Gear Ratios

1st	2nd	3rd	4th	5th
2.480	1.690	1.230	1.000	Rally / Race set
2.480	1.690	1.600	1.000	Hot Rod set
2.290	2.070	1.950	1.000	BRSCA F2
1.000	2.000	1.950	1.000	Formula

QBE2Z (from Mainshaft) £1,550.00
QBE2Z (Alloy Mainshaft) £1,550.00

*Donor gearbox required

RECOMMENDATIONS: Fuchs Titan Race Oil (see page 131) | REM Superfinishing (see page 131) | All Prices Exclude VAT

Lower shaft in centre is the type described as made in one operation

Alfa Romeo & Austin Healey Gearkits

Alfa Romeo 5-speed complete gearkit

- 5-speed synchromesh gearkit
- Helical gears
- Close ratio
- Includes input shaft, mainshaft, layshaft and reverse gear
- Fits in standard casing with standard gear change
- Optional Quaife ATB & Tran-X LSD differential

Alfa Romeo 5-speed gearkit

- 5-speed synchromesh gearkit
- Helical gears
- Close ratio
- Includes input shaft, mainshaft, layshaft and reverse gear
- Fits in standard casing with standard gear change
- Uses all original synchromesh parts
- Optional Quaife ATB & Tran-X LSD differential

Austin Healey 3000 4-Speed Gearkit

- 4-speed synchromesh gearkit
- Straight cut, close ratio gears
- Optional Quaife mainshaft
- Optional Quaife 1st/2nd & 3rd/4th hubs and sliders
- Optional Quaife ATB & Tran-X LSD differential

Alfa Romeo Gear Ratios

1st	2nd	3rd	4th	5th
2.476	1.667	1.222	1.000	0.857

Austin Healey Gear Ratios

1st	2nd	3rd	4th	5th
2.440	1.600	1.400	1.000	0.800
2.413	1.722	1.254	1.000	0.800

Products available through: Furland Racing, Tel: +49 50 222 415 757, Email: info@furland.de, Web: www.furland.de

Products available through: Alfaholics, Tel: +44 (0) 1275 349 449, Email: mail@alfaolics.com, Web: www.alfaolics.com

Products available through: John Chatham Cars, Tel: +44 (0) 1279 201636, Email: info@johnchathamcars.co.uk, Web: www.johnchathamcars.co.uk

RECOMMENDATIONS: Fuchs Titan Race Oil (see page 131) | REM Superfinishing (see page 131) | All Prices Exclude VAT

This leads us to the tour of the Quaife factory.

To put our tour in simplistic terms we were shown around three areas of the facilities at Quaife:

- The quality control and measurement section.
- The main production area and machine shop.
- The spares department.

In the first section we saw a very sophisticated machine where random or initial run components can be measured on a machine that could record to one ten thousandth of a millimetre. A whole range of normal measuring devices were also in use here.

For probably all NKLK visitors the machine shop area of Quaife was like "Charlie" being let loose in the "Chocolate Factory" There was so much to see and watch being made. It was magical! We saw gearboxes, differentials, steering boxes and many, many more items being either manufactured, or partly or fully assembled. Some of the machines we watched working, individually cost over £1 million. And there were several of these, as well as maybe thirty or forty other machines of varying complexity, right down to conventional lathes similar to those some fortunate members of the Group own.

Two things being made caught my eye.

We watched a complete steering box rack being machined from a single rod and this included the triangular rack section, all in one single operation. Because of the length of the whole rack, as the machine cutting takes place pressure is obviously applied by the machine tools and the rack has a slight curve when finished. Curvature is measured by hand and adjusted in a press.

The other impressive operation for me was watching a 200mm (8 inch) bar automatically entering a machine from a rotary feed and the machine cutting about five gears of different sizes and shapes (straight and helical) on a fixed varying diameter shaft. The single piece then came out in its finish state, without any further work, in less than five minutes.

The final area we visited was the spares department. We wandered in amazement through storage racks in ranks from floor to ceiling, containing small parts, complete gearboxes and differentials for a huge number of car manufactures and motorsport application. The department contained 23,000 individual parts each with its own number. This may be a complete ford "Rocket" gearbox or just the synomesh ring for one gear. Each having a part number. Turnover in this section was for, most items, fairly rapid.

On the Lotus front Quaife make many part for Lotus particularly for the Elan and plus two range and the Elise.

See www.quaife.co.uk or 01732741144.

Finally thanks must go to John U for arranging this visit, which all who attended thoroughly enjoyed. Those lucky enough to attend were also given a "goody" bag by Dale and we thanked him for his generosity.

As we all prepared to leave the factory (it seems wrong to call it a factory, because most areas were clinically clean) I think we were all spellbound to reflect on what we had seen and we thank and congratulate Quaife on their marvellous achievements. A great advert for British industry.

Many thanks to Dale.

On a less dreamy note, may I make a personal plea to all NKLK members, that we increase our efforts to support Group event's. This is particularly important when bookings have been made and numbers turn out to be less. For example at Quaife the company had arranged for three additional employees to help with the visit, with two of them operating machines, just to show us how the complex processes are performed. A bit disappointing for them to find fewer visitors!

Also, do not forget our own members who volunteer to organise events. Their time and sometimes personal money are wasted if and event has to be cancelled.

Let us all do our best, always recognising our busy lives these days!!

Chris Couldrey

Forthcoming Events

June 7th – Recharge Run.

June 14th – Club night.

June 17th – Ryarsh Village Fete

June 17/18th – Le Mans.

June 21st – Maidstone Sportscars.

June 29th – July 2nd – Goodwood Festival of Speed.

Please get in touch with John P, Jon & Michelle for further details.