

GARDNER

Engine Forum



Winter/Spring 2002/3 Issue

No.3

Gardner Engine Forum Philosophy

"The aims of the Forum are to promote and foster interest in all Gardner Engines".

Subscription

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*(Front cover photograph – aerial view of Barton Hall Engine Works)

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Please Pay	Bank HSBC Bank plc	Branch Title (not address) RUGBY	Sorting Code Number 40-39-11
for the credit of	Beneficiary's Name GARDNER ENGINE FORUM		Account Number 2 1 7 0 3 4 1 2
the sum of	Amount £10	Amount in words TEN POUNDS	Membership No.
commencing	Date of first payment and thereafter every	Due date and frequency ANNUALLY	Date of last payment U F N

and debit my/our account accordingly

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Chairman's Jottings

"It never ceases to amaze me how many phone calls I have received over the past few months on the subject of Gardner Engines. I also know that John is taking many calls as well. It does seem that, in this day and age, most of us don't want to forget the past history in the UK.

We have had two very able offers to join the committee, Chris Williams and Mike & Lucy Short, they both attended the committee on 29th August where they were co-opted until the next AGM.

Lucy and Mike are our new Secretaria and Chris Williams is ready to help with the Rally.

On the subject of the Rally, Gardner Parts have told me that they cannot sponsor the next Engine Rally at Nottingham in 2003. With this sad news, I have decided that the Gardner Engine Forum will take over the rally, which will help with the organising and be able to offer financial support as well. The two are now one.....so to speak.

The GEF will give me the help and support for the rally, but it will mean that we will have to ask for an entry fee for each engine (not owners) amounting to £12.50. This entry fee will include plaque and administration costs, site costs, insurance etc. Any monies left will be put into the GEF funds.

The first engine rally was held at Nottingham in 1991, when we had to ask engine entrants to fund the rally, the wheel has gone full circle.

I have taken the liberty to enclose, as a loose insert, a rally application form; the press release has already gone out to the magazines so watch this space.

Our membership is still increasing as you spread the word.

The cover photograph of the works (taken in the late 1960's) is a very important image, as the site is now being reduced in size, with the playing field already built on with new housing development. Originally, L Gardner & Sons produced this photograph with an overlay outlining the use of each of the buildings.

I was given the opportunity in July to walk around the site and gain access to most of the building, with Geoff Challinor from the Anson Museum, to take photographs before anymore of the site is lost. Thanks to Gardner Parts for allowing us there and for their help in gaining access. I will be printing the photographs that were taken during the visit in the magazine in due course.

I have looked into the Christmas card printing (copy of old card from the works) but it does not stand up at the moment but I would have liked to be able to offer them but perhaps at a later date.

On my last note, a request.....do any of our members have the time and expertise to build and maintain a GEF website?"

Colin Paillin
Chairman

Treasurer's Notes

"A big thank you to all the members who have completed the Standing Order Mandate for renewing their membership. It saves a lot of time, effort and money both for John (Membership Secretary) and for myself as Treasurer.....no phone calls, no postage, etc.

Those of you, who have not yet renewed your membership, please consider The Standing Order system. We have forms available if you do not wish to deface your magazine, Thank you.

The funds are in good shape but we need to fund next year's Rally at Nottingham so all funds raised by sales and renewals, etc., will be important."

Tony Redshaw

GARDNER ANNIVERSARY REPRINT

“WAR, DEPRESSION & RECOVERY”



The Great War saw the first women at Barton Hall

For Gardners, the Great War began with a great deal of uncertainty, for the government had no contingency plans for the production of munitions. Although one hundred Gardner employees went into the armed forces at once, the remainder, ironically, went on short time, despite the potential need for their productive capacity.

By October, however, they were back on full time, making gun carriages for a Vickers 18-pounder. By March the next year there was work and to spare. The company, now operated under the direct control of the government, began the machining of ten thousand bombs. As work increased, and men leaked away into the forces, serious decision was taken; to replace them with women.

Although Manchester, had been a pre-war centre of suffragette militancy, women were still the fairer, gentler sex at Gardners. Some care was taken over their introduction to the work-a-day world of industry. At the beginning of each day, the

first recruits assembled in the works office, before going out to their benches in a body. They were provided with seats at the machines. They were instructed at night, after the men had left. They had an afternoon break during which tea was served. And they left five minutes before the men.

The foremen were puzzled by the innovation; until they hit on a correct course of behaviour. They decided to treat the women and girls exactly as they were used to treating the young boy apprentices. It was a happy solution. Some thought was given to the working attire of the newcomers. Mr Hunter, the works manager, noted in a diary he kept: 'A garment was evolved that was both serviceable, being black and tight enough to keep skirts out of belting and machinery, and becoming, since it had some sort of fancy white collar'.

The losses at the Front, and the extension to the call-up, meant that by the end of 1917 there were to be 190 women and 50 girls to 153 boys and 550 men. That last terrible year of war pushed the final figure up to 320 women. And two months before Armistice Day, the decision was taken to give women jobs in the moulding shop.

Although a minority, their influence through the war years was considerable. Athletics was dropped in favour of dancing and the promising tennis section was ruined. To try and lift the standard of play from the abysmal 'pat and giggle' level to which it had fallen, the company paid a professional coach to spend evenings with the 'green' players. The move failed. Mr Hunter noted, 'Most of them prefer to go down on the courts and have riotously joyful games of their own invention'.

There was little else joyful in those busy years, unless it was the Town Hall concerts of the Barton Hall Orchestral Society, but Gardners were at last allowed to make a contribution to the war effort more suited to their skills than the dull machining of bombs. Together with four other manufacturers they began making tank engines to a design by the distinguished engineer, Sir Harry Ricardo. By 1917 they were turning out ten tank engines a week and were also making all the crankshafts for the engines made by the other manufacturers. A very successful machine tool for this operation had been developed at Patricroft, fifty of which were later sold to Russia.

At the turn of the year food became very scarce, although it remained cheap enough by the standards of today. When Gardners, planning a canteen of their own, checked what others were charging they found soup was 2*d*, mutton with two vegetables 6*d*, roast beef and two vegetables 8*d*, boiled pudding 1*d* and a pint of tea 1½*d*.

Even the biscuits the women enjoyed with their afternoon tea had to be omitted. Then saccharine had to be substituted for sugar in the tea itself, until a 9 lb a month ration for these important war-workers could be obtained. In March, part of the sports-field was ploughed for cultivation. It would be reinstated the following year. On Monday, 11 November 1918, word of the Armistice filtered through to the works

built in 1919 was not, and the new range of engines developed was to have an operational advantage over existing plant. Given the fuel prices of the day, they were astonishingly, almost incredibly, cheap to run.

This was achieved by a logical step, but a bold one. Instead of cheapening their pre-war range to secure a competitive advantage, they made it more expensive. They re-designed the whole range to produce compression ignition engines, true diesels. No blow lamps, no hot surfaces, no electric plugs, the engines started from cold on compressed air and developed full power immediately.

Take these running costs. A Lancashire cotton mill drove the equivalent of 120 looms for forty-eight hours a week at a cost of £1-19s-6*d*, using an HF type, the updated horizontal. (It was the last horizontal engine but nevertheless remained in production for twenty years after its introduction in 1922). Another mill, with a 27-bhp engine of the same type, obtained 27-bhp for 110 hours a week at an oil and lubrication cost of £3-16s-0*d*. They wrote: 'Quite frankly, we never thought the engine could be such an unqualified success although we knew, of course, of the Gardner reputation for reliability, and were therefore assured of satisfaction, but we have obtained extra-ordinary satisfaction'.

A Lancashire brickmaker drove a 65-bhp engine for 7½ hours a day consuming 24 gallons of oil at 6*d* a gallon. That 12s contrast with the steam engine which was replaced. It had burned two tons of coal a day at 27s 6*d* a ton, including cartage. The wages of a fireman, at 45s a week, were also saved.

Gas-fired engines were often almost twice as expensive to run. A Birmingham firm of brassfounders went further. They reported that a 65-bhp Gardner engine was doing the same work for £2-9s-0*d* a week as had cost £9 in gas and electricity. And a Belfast corn-miller reckoned his 45-bhp engine saved him £240 a year in electricity bills.

As with the brickmaker's redundant fireman, economy could take many forms. Lubricating oil was more expensive than fuel. The new engines could burn anything that flowed, and, if they could be warmed, some things that did not. Mr Hunter noted in his journal, 'Some lubricators cannot be relied upon to give exactly the correct number of drops all the time so the engineer in charge is tempted to set the lubricator rather more generously than instructed, or even to stand by with a can of oil and pour it on. The Gardner lubricator can be relied upon to drop oil at the same speed from one year's end to another's; therefore there is no need to waste drops of oil. Further, there is no need for the man standing by, nor for the can he would hold, nor even for the rag with which he would wipe up the wasted oil'.

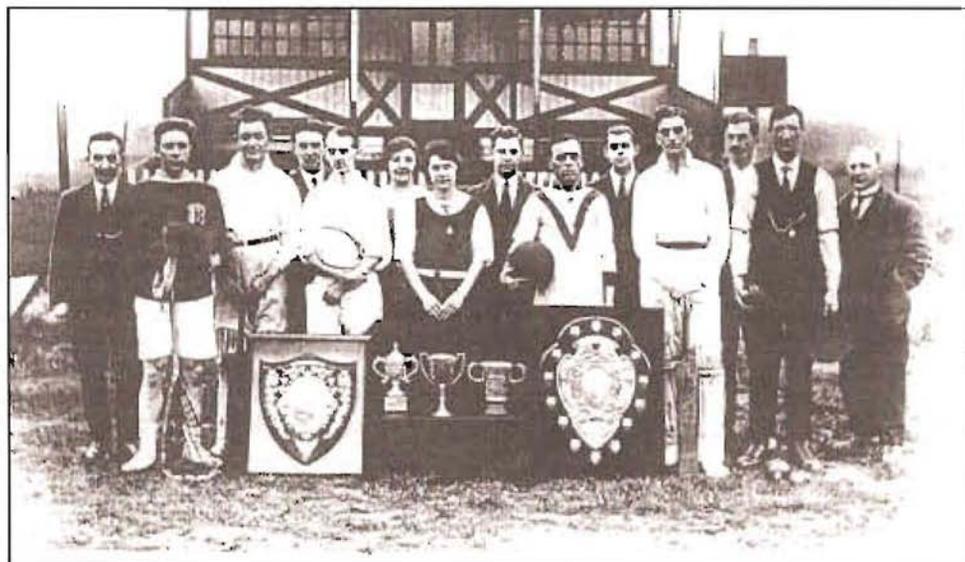
For marine engines, full compression ignition meant that further economy and simplicity were added to the successful self-reversing two-stroke. The type was

designated J and produced from 54 to 400 bhp from between three and eight cylinders. In 1928 a pair of six-cylinder J-type engines were fitted into a Camper & Nicholson boat which Prince Rainier of Monaco later acquired as the Royal Yacht *Deo Juvante II*. After his marriage to actress Grace Kelly in 1956, they honeymooned on the Royal Yacht and 'the two excellent Gardner engines ran like clockwork', he reported in a Sunday newspaper life-story ten years later.

The new diesel engines were started with air compressed by the engine and stored from one run to another. For use at initial starts, and whenever storage containers were accidentally discharged, a small petrol engine, designated OVC, was developed. This charged a 4 cu. ft container to 250lb/sq. in. in 22 minutes.

As the merits of the new engines became established, a recovery in fortune began for Gardners. Experiment and testing paid. It brought its critics, however. As Mr Hunter noted, after a single engine had been on test, 'A woman from Hardy Street came along to complain about the noise which she said was quite unnecessary for other firms never made so much noise when they were testing engines. She said it was all pure swank on the part of Gardners but took care to vanish before Mr Willie could be brought along to see her.'

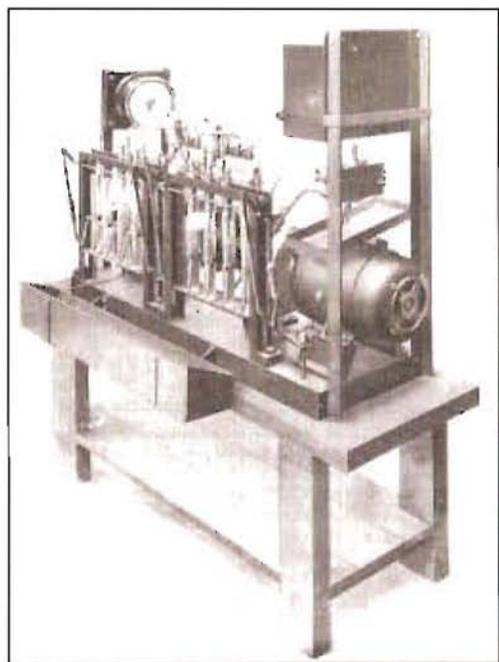
It would be difficult to pick out the note of a single engine in busy Hardy Street today. But at that time the note of one new engine type was going to turn slow recovery into galloping prosperity, a note that would last, like the L in every future engine designation, until the present day.



A variety of sports were enjoyed by both men and women, as this photograph shows.

Gardner Picture Gallery

*"L" Type engines – fuel injection pump
calibrating machine"*



*"L" Type engines –
sprayer testing apparatus*



Readers Letters

3 Alexandra Terrace
Skipton
North Yorkshire
BD23 2RQ

Dear Mr Paillin

Please find enclosed a few lines and photos of my 3LW experience, which you might use in the clubs newsletter.

Having purchased lots of magazines on old engines, I decided a Gardner 3LW would be the right choice of engine for my new Narrowboat, but where are they all? I purchased fairground mags and spent a small fortune on phone calls to showmen up and down the country and located one up in Sunderland under a wagon covered in sheeting.

He had been using it to run a generator, at first I was a bit worried as it would have been abused for long periods at a time but he assured me that it runs but smokes a bit. Well I decided that the price of this engine was the only one available within my budget plus time was running out as I had ordered my new Narrowboat shell. When I returned home with the engine the first thing was to get it running so we did just that.

Well when it started it was like a movie set fog machine, I have never seen an engine blow out as much white smoke before. Being somewhat mechanically minded and asking other people who have more knowledge of these engines I decided to take out the injectors and I have had exchange units fitted after doing so we started it up once more. This time with better results!!

After doing this, we tested the oil pressure which was OK, so next step I thought I would take the cylinder head off and give it a decoke, from which I found that the exhaust ports were very clogged up with tar substance. Once the head was off I also checked the movement in the pistons which there was no play at all in the bores, so after the decoke I was assembling it back together. In between time I was trying to contact people which could help me in anyway, replacing parts which were worn out, and my thanks go to Paul Gardner Engineering plus Bill Geldeard..... it is now running OK. Bill Geldeard was very helpful and it was he who suggested I joined the club.

I would also be grateful if anybody could let me have any tips on maintaining and troubleshooting faults I may find whilst running this engine, also knowledge of this engines history (engine No 34008)

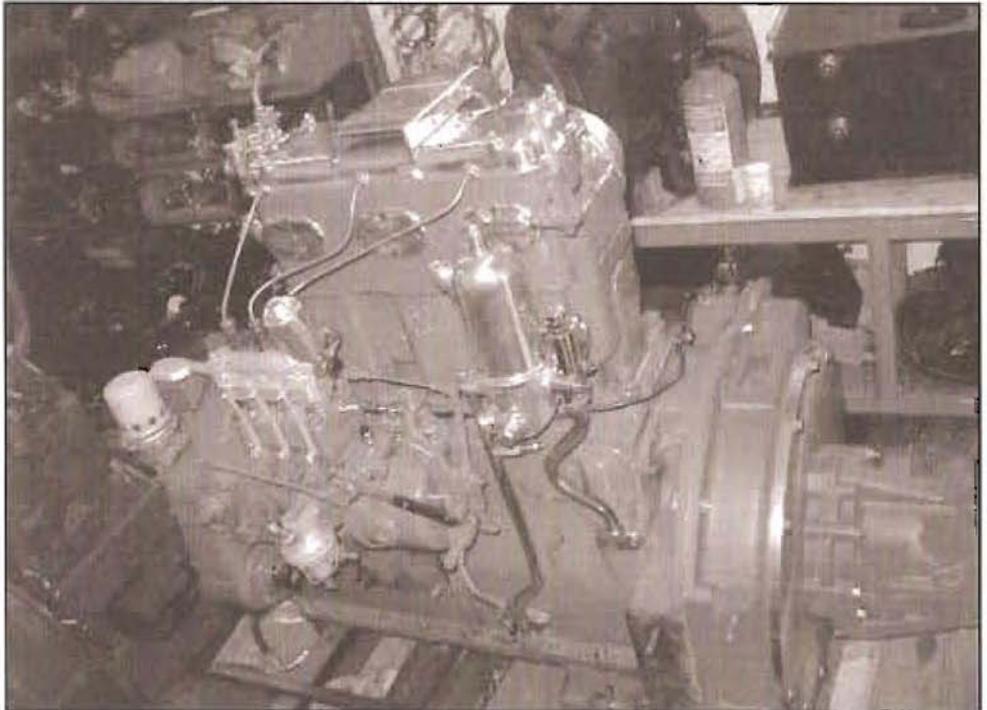
Contact details

Peter Spence

Tel/Fax 01756 796464

Email spence05@yahoo.com

Membership no 156



20 Barnards Hill
Marlow
Bucks
SL7 2NZ

Tel: 01628 483613

Dear Colin,

Many thanks for the membership card and welcoming letter.

You ask for my involvement with Gardner.

For the past 26 years I have owned a boat called "Goldcrest" ex "Gang Warily" powered by a 6LW Gardner engine no: 69095 which was built in July, 1946, 72 bhp @ 1200 rpm with a 2UC gearbox and 2.1 reduction gear, I have converted the engine to fresh water cooling by external keel coolers.

When I bought "Goldcrest" in 1976 I was led to believe that the Gardner was originally supplied to Prince Rainier of Monaco in 1946, for a large yacht that he then owned.

After a few hours running it was found that the Gardner was not powerful enough and replaced by a Lister!! The Gardner then stood in the Lister factory for nearly 20 years, before being fitted to the "Goldcrest".

Does anyone know if there is any truth in this story?

Prior to 1976 I owned a boat with a marvellous 5L3.

Kind Regards

Maurice Sansom

19 Wilson Grove
West Park
Uckfield
East Sussex
TN22 2BV

Dear Colin,

Please find enclosed photocopy of front cover of 4LK leaflet No: 653. I thought this may be of interest, perhaps just to you, or might be suitable for inclusion in the newsletter at some time. It is slightly frayed reduced in size from the original. On the rear cover there is the following John Ruskin quote. "There is hardly anything in the world that some man cannot make a little worse and sell a little cheaper, and the people who consider price only are this mans lawful prey."

Also enclosed is a photocopy of an article you may or may not have seen. It appeared in Truck Magazine in Feb 1976. (Shocked me to think this was 25 years ago).

The same issue carried an interview with John Gardner.

Now how about a poem

*"Where once the hermit ran to hermitage. Now smelly albinos crawl, o'er
Newbury Bridge or ancient Thonycrofts were wont to rock.
Now only hear the common or Gardner knock.
Of diesel engines, pounding where you will
To Kingsclare, Hungerford or Watton Hill
Where Dennises on Thursdays, small in size
Served Eccinswell or Inkpen, wartime guys
Disturb our lanes with hideous noise and loud
It might be Newport, Never more to see
Those individual crocks, called N and D
We make our movements independence gone
By order of the Bulwark, Chepstow, Mon."*

(Henry Sandham, Eighth Army 1944)

This poem was published in a magazine called Vintage Commercial in April 1963, a magazine from the early days of commercial vehicle preservations. The poem apparently bemoaned the fact that a small local bus operator (Newbury and District Motor Services) had been taken over by a larger operator (Red and White) Nothing new in takeovers!

I will at sometime try and get down on paper how I first became interested in Gardner and how in 1970 with my Father found and restored a 1909 No 1 gas engine and developed from there.

Kind Regards

Dave ???

10 Brooklands Drive
Goostrey
Crewe
CW4 8JB

Dear Mr Paillin,

Thank you for your letter giving details of the plans for the Gardner Club news sheet.

I served my apprenticeship with Guy Motors and with subsequent posts. I was there from September 1950 to August 1959. I subsequently became the Sales Manager for the Devon Colne, so I have had a lot of dealing with Gardner and its products.

I remember the ERF CI4 – FTD 641, now rallied by Robert Somerset, when it was owned by Gardner, bringing engines to Fallings Park each week.

I am completing my records of Guy Arab bus chassis and in the years 1946 – 52, many chassis received second hand engines for which I have the numbers. Whilst I would like to know where some came from. I wonder if any members can provide dates of manufacture. Whilst not wanting it for individual engines. I wonder if any member could provide a guide to first or last engines built each year this will give me an idea when they were built.

If anybody is compiling a list of Gardner users. I can supply details of those in Guy chassis in the bus and some truck chassis from the 1950's. I am enclosing a list of Gardner engines fitted in 1953. I can go to chassis numbers and model types plus PSV registration numbers (UK) if required.

The models that the engines were in are:

4LK Otter 6 tonner – goods and passenger
5LW – Arab SD or DD
6LW – Arab SD or DD
5HLW & 6HLW Arab UF (underfloor)
Arab LUF (lightweight underfloor)

I wish you well with the new club.

Yours sincerely,

Robin N Hannay (215)

Mr C R Meadows
33 Beck Avenue
Ormesby
Great Yarmouth
Norfolk
NR29 3lf

Enclosed is a photo and few comments from a magazine called Heritage Commercials. Could the Gardner engine they are talking about be a Marine 5LW?

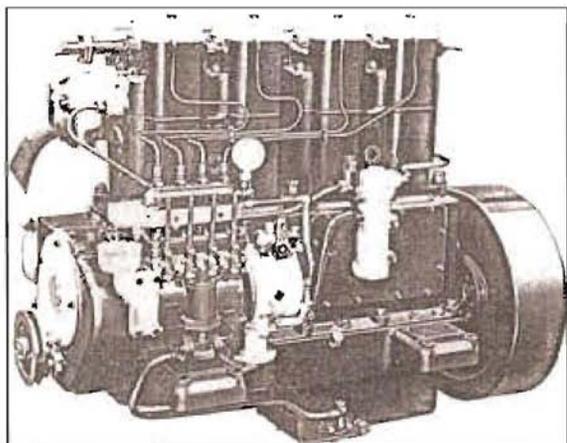
Colin Meadows

"After stripping down the Gardner diesel engine, Billy was aghast at what he found, and it's a tribute to his perseverance that he didn't insist on a serviceable and more easily-restored substitute. "The engine oil was more like tar, and it looked as if it had never been changed." He said. "But I wanted to keep it as, for a Gardner 5LW five-cylinder engine it was very unusual as these usually have a three and two cylinder block configuration, but this one had a single, solid five cylinder block which might not be the original."



BIRTH OF A LEGEND

How the Gardner 4L2 first found its way onto wheels,
by Nick Baldwin, editor of Old Motor



*Designed a stationary engine,
the original Gardner 4L2
soon attracted the attention of
economy-minded truck and
bus operators.*

When TRUCK tested the ERF 38G2 TR SBO tractor in the November issue, its fuel consumption and performance record added one more tribute to the legend that has built up around the famous Gardner engine in its various forms over the past 45 years.

However impressive TRUCK's findings in November, imagine how much more amazing they would have been if this had been an entirely new type of engine able to double the mileage per gallon of virtually any engine around. Incredible, and yet this is what happened 45 years ago when the Gardner L2 range first appeared on the British market.

The curious thing is that the Gardner found its way into trucks almost by accident. L Gardner and Sons were engineers with a history stretching back to 1868. Early products included all sorts of specialised cloth making machinery, dynamos and mechanically operated dental chairs.

However, in 1893 Gardner produced their first engine, initially a stationary unit powered by coal gas, but soon afterwards designed to run on crude oil, with its own fuel metering pump and bulb ignition heated by a blow lamp.

Gardner soon built up a thriving business based on stationary engines for driving machinery, and also for powering boats, and a few even found their way into portable compressors and road rollers. However, by no stretch of the imagination were they suitable for powering ordinary road vehicles. They were heavy and massively built to withstand the high compression necessary to ignite the fuel in an oil engine, and they were very slow revving. They did, though, have the very tempting prospect for

truck operators of very low fuel consumption and the ability to run on far cheaper fuels than the petrol used in all but the steam lorries still so prevalent in the 20's.

What really had started the interest in oil engines for trucks in Britain had been reports percolating from Germany since 1923 about the experimental MAN and Benz lorries.

When the successor to one of these, the Mercedes-Benz oiler, first appeared in Britain in 1927, it set a great many transport men thinking, though they were worried about the high price of the vehicle and its long term reliability. At the same time the British vehicle makers could see the potential benefits, but had a twenty-year backlog of development time to catch before they could compete.

A few like Garrett and Kerr Stuart made a handful of lumbering trucks with Benz engines built under licence by McLaren, but despite the arrival of the Saurer diesel engined truck in 1928 it looked as though most operators were going to have to wait many years for the oiler to become a practical proposition.

Quite how the Gardner engine found its way into the breach is something of a mystery, but the best and most likely story is that bus operator Trevor Barton of Beeston, Notts, spotted a 4L2 marine engine at the 1929 Marine Show at Olympia and decided that it was just as suitable for road use as the monster German engines that he had seen.

The upshot was that he bought a 5.6 litre 48bhp 4L2 and installed it in an old Lancia bus chassis, which he put into service in March 1930. Simultaneously, or very soon afterwards, other garages and contractors did similar conversions to all manner of old chassis with worn out petrol engines, and they reported some astonishing figures, like 12mpg from an old RAF Leyland carrying 6½ tons!

News of these developments soon spread to the vehicle makers and in September 1930 Walker Brothers of Wigan unveiled their Gardner-Pagefield 5-ton chassis, the first all British diesel vehicle to be built from scratch in this country.

After satisfactory tests it joined the fleet of Burton Transport, who had the contract to deliver Pirelli tyres from Burton-on-Trent. Two and a half years later it had covered 115,000 miles, with minimum wear or replacements, at an average fuel consumption of up to 16mpg laden or 10mpg with trailer at 15.25 tons gtw.

Soon such respected names as Tilling-Stevens, Karrier, Peerless and Foden were fitting Gardners as well as lots of operators converting old chassis. By accident Gardner had found themselves in the thick of the truck industry, though they were the first to admit that, despite having enormous advantages over the contemporary petrol engines, the L2 range in three to six cylinder form was by no means ideal for commercial vehicles. It was too heavy and developed its power at too low revs, 1300 being the usual governed maximum. So with some 200 L2s in service around the country Gardner introduced their first specifically automotive range, the LW, in August 1931. LW stood for lightweight, and this was achieved by the extensive use

of aluminium alloy in place of cast iron. Power to weight ratio was improved by two thirds and the output of the four-cylinder version of the LW was 68bhp developed at a more realistic 1700rpm.

As well as the firms already mentioned the new Gardner was adopted by Bristol, Scammell, Maudslay and Daimler and soon afterwards by Atkinson, ERF and others. Its benefits were also extended to lighter vehicles with the 3.8 litre 4LK in 1933. It was the beginning of a new era in British road transport.

Gardner Quiz

The 5 questions for this issue are as follows:

1. In which year was the first oil engine produced?
2. How much did it cost to buy?
3. What was its serial number?
4. Why this number?
5. What happened in 1896?

Remember, you can submit Q's & A's for publication.

(All replies/new questions should be sent to:

Tony Redshaw, 5 School Street, Hillmorton, Rugby CV21 4BW)

Engine Dating Service

Mr G Challinor is offering to date Gardner engines when they left the works and to whom the customer was. Please enclose £10.00 with the engine number to: G Challinor, 1 Somerford View, Holmes Chapel Road, Somerford, Congleton, Cheshire CW12 4SP.

Gardner Marine Pennants

We are pleased to offer for sale, the official Gardner Marine Pennants at a price of £18.00 plus post and packing. Please send your cheque, made payable to "Gardner Engine Forum", direct to Colin Paillin (at the address on Page 1).

STOP PRESS>>>>>STOP PRESS>>>>>

There is a new Gardner Book called L Gardner & Sons Ltd that has been written by Graham Edge. It is published by Gingerfold publications.

8 Tothill Road, Swaffham Prior, Cambridge, CB5 0JX Tel: 01638 742065

The book is priced at £24.50 plus £2.50 p&p and it was launched at the Engineering Museum in Manchester on Friday 29 November 2002.

Advertisement Corner

ITEM

6LXDT Parts

*Cylinder head reconditioned Camshaft kit new
Crankcase, crank, fuel pump Lift pumps*

6LXB Parts

*Cylinder head reconditioned Big end shells new
Fuel pump vessels Oil pump new Injectors & Valves*

Wanted: 2L2 cambox,
cash waiting

Wanted: Inlet valve high lift cam
(Extra high compression hand start) for LW series.

RH24 x 22" propeller
for sale, standard turbine blade with 2" Ø taper.
Used for about forty hours £240.00

2LW inlet manifold side entry
available, would like to swap for top entry manifold.
Also have rocker cover to suit.

CONTACT

James A White
07703 132 151

James A White
07703 132 151

Gill
01788 571355

Colin Paillin (Chairman)
Tel: 01949 869 004

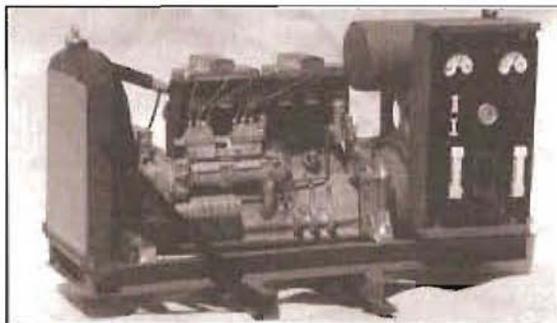
Trevor Oxley
Tel: 07931 339291

Trevor Oxley
Tel: 07931 339291

DOUG ROSEAMAN ENGINEERING

101 Westbrook, Bromham, Chippenham, Wilts SN15 2EE

1/24th Scale Engine and Generator Models, using white metal, brass and resin.



F4 Diesel generator set. Scammell radiator. 6LW engine, generator, switchboard & 5" long brass chassis. 57 piece kit - £39.50. Built, painted & mounted on wooden display base - £75.

F4A as F4 but with small electric motor which turns a flywheel between engine & generator. 60 piece kit - £45.75. Built, painted & mounted on wooden display base - £85.

F4B as F4 but shortened to 4" to fit across chassis of lorry. 57 piece kit - £39.50.

F3 Gardner 6LW engine including brass chassis. 29 piece kit - £25.20.

Prices inc. p&p.. Send 5 1st cl. stamps for 1/24th or 6 1st cl. for 1/76th scale fairground lists.



ENGINE RALLY

21/22 JUNE 2003

**NOTTINGHAM
TRENT
EMBANKMENT**

**Road Vehicles, Stationary and Marine
Engines on display**