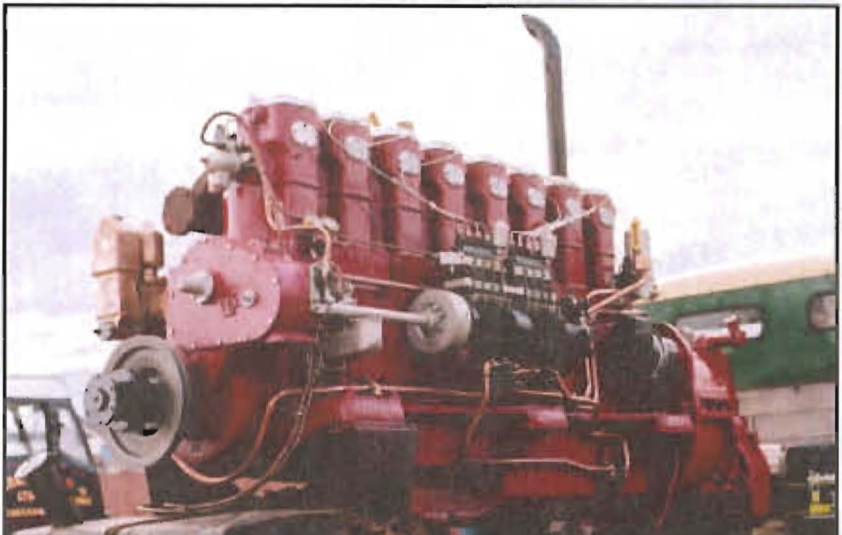
Engine Forum



Autumn 2003 Issue

No.5

Gardner Engine Forum Philosophy

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

Subscription

The annual subscription to the forum is £10.00 (This magazine will be published twice a year)

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Note 3: The Gardner Engine Forum does not specifically endorse advertisements placed in this pnblication and it does not accept responsibility for the products advertised.

Contents

Cover Picture

Taken at the Gardner Engine Rally 2001, Walsall. 8L3 marine engine brought up from the South coast with a 6LXB under the bonnet as well.

Chairman's Jottings

To those that came to the rally at Nottingham whether as an exhibit, or just to "see what was going on" I would like to thank you. I hope you will agree we all had a good time and it was great meeting up with old friends and making new ones as well. Those of you who did not come, truly missed a good do, made so much better by the weather being kind to us.

The rally was well supported by the marine side with the whole of the site taken up by boats, so many in fact that most moorings were doubled up. We were very pleased to see one of the largest barges that can navigate the bridge at Newark (all 114ft of her) with a Gardner 6L3B. Entrants for road vehicles and stationary engines were well down on previous rallies, which I can only assume was due to asking for an entrance fee. (You may or may not be interested to know that we barely covered our costs for the rally despite charging for entry.) For the 2005 rally we are endeavouring to have some financial support / sponsorship and therefore hope that entry will be free again.

With regards to the rally in 2005, I am looking in the North West area .... but don't start planning the route just yet.

The cover picture on the last newsletter depicted the last new build Gardner engine and I have had a couple of phone calls asking for the engine number (which we did not have at the time of going to press in June). It is No. 251907.

In the next newsletter we will be giving details of venue and date for the next AGM, which should be April 2004. I have had several comments from members asking what happened to the 2003 AGM, and I can only apologise that it did not take place and say it will not happen again.

Regards

Colin Paillin

Chairman
Gardner Engine Forum

Diesel Maintenance
by T. H. Parkinson, A.M.I.A.E.

Chapter 1
History of the Modern Transport Diesel

Adaptations of Marine and Stationary Units; First Experiments on Goods Vehicles and Passenger Vehicle Conversions; Characteristics of Oil Engines and their Effect on Maintenance Compared with Petrol Engines; Operational Requirements Affecting Design; Combustion Chamber Development and its Influence on Present-Day Maintenance.

The present standard of road vehicle oil engine efficiency suggests a development period of greater length than the twelve years, which, in actual fact, more than covers its history as a modern road transport, power unit.

The year 1928 saw the introduction into this country of certain Continental diesel engined chassis. This focused attention on a possible alternative to the petrol engine, which at that time had reached a very high standard of efficiency, particularly in the commercial and passenger vehicle field.

Some reference to the early development, which played an important part in modern design, is necessary if the present position in regard to maintenance methods is to be appreciated.

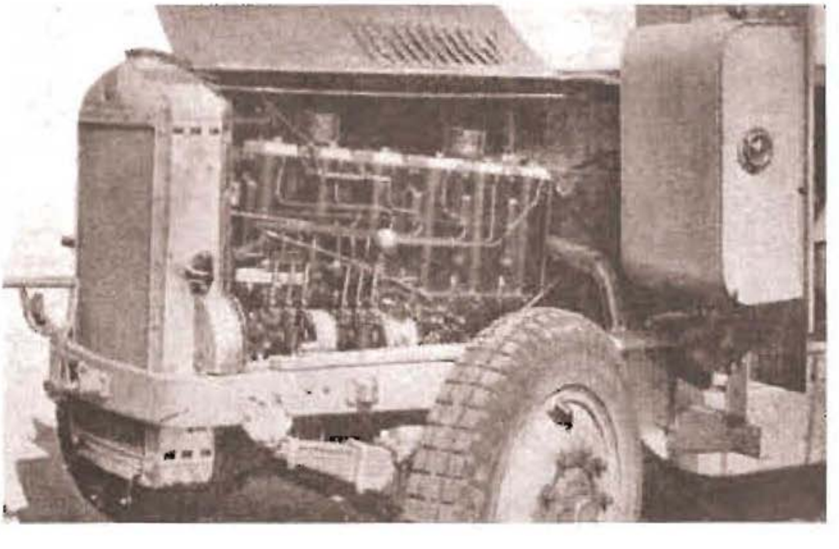
Although no single manufacturer can be credited with the pioneering of compression ignition oil engines for road vehicles the important contribution of L. Gardner & Sons Limited, to British development must be recognised. Their introduction of the direct injection "L type" light marine units, exhibited at the Shipping and Machinery Exhibition in 1929 made possible the conversion of existing vehicles, which for some time was the principal method of applying and using compression ignition power units.

It is to an operator of passenger vehicles, Mr. T. H. Barton of Nottingham, to whom must be accorded the credit of foreseeing the possibilities of a sound alternative to petrol engines. His foresight and effort in converting a passenger vehicle was largely responsible for the introduction in conversion form of the Gardner engine.

A firm of commercial vehicle agents, F. H. Dutson (Leeds) Limited, was shortly afterwards offering converted goods chassis, and in June of 1930 did a good deal to dispel many of the pessimistic views then expressed about diesel engined vehicles.

Conversions at that time naturally received much prominence, but a considerable amount of development had been carried out by a number of the leading passenger vehicle manufacturers, AEC, Crossley and Leyland in particular.

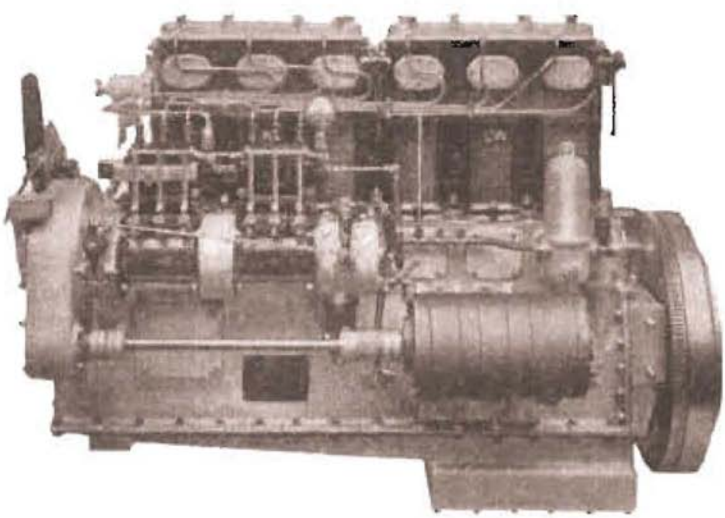
All these manufacturers did not confine their efforts to the direct injection system. In reviewing the present day position of oil engines, and noting particularly the progress made with direct injection units, one may be forgiven for asking why any alternative to this system should ever have been considered. There were a number of very sound reasons at that time to encourage the use of alternative methods, and it is of some value to examine the circumstances that controlled the position when the line of least resistance might have been followed.



The first all-British oil-engine fitted to a double-decker bus in municipal service, a Crossley with a 6L2 Gardner engine operated in Leeds in 1930.

Goods vehicles prior to 1930 were not handicapped by any serious weight restrictions. Fuel oil was tax-free and could be purchased at four pence per gallon against petrol at 1/6 per gallon. Oil engines fitted as conversion units provided approximately double the mileage per gallon as against the petrol engines they replaced, and it is not surprising that conversion under these circumstances was attractive, and accordingly the direct injection engine then available had little opposition. It was at first fitted as a conversion to existing petrol chassis, and these were followed by certain vehicles in which it was incorporated as the standard power unit or offered by the makers as an alternative to their own petrol engines.

The legislation introduced in the 1930-33 period, however, imposed severe speed restrictions on heavy goods vehicles, machines of over 2½ tons unladen weight being limited to 20mph. Taxation, too, was based on the unladen weight of the vehicle while gross weight, i.e., the weight of the vehicle and its load, was limited to maxima dependant upon the number of wheels, a four-wheeled (two axle) vehicle being permitted a gross weight of 12 tons, a six-wheeler (three axle) vehicle 19 tons and one with more that six wheels 22 tons. Quite obviously the speed limitation rather favoured the early oil engines, since speed (and acceleration) was not of particular importance in heavy goods transport in any case.



With the introduction of the LW type Gardner in 1931 the future of the compression ignition on automobile lines was assured. The power weight ratio was reduced by half

On the other hand the system of taxation based on unladen weight was detrimental so long as the weight of the oil engine was greater, power for power, that that of a corresponding petrol unit. To some extent, also, the greater overall length of the earlier transport diesels was a factor not in their favour, in view of the fact that the overall vehicle length was subject to legal restrictions, with the result that the more space taken by the engine meant a corresponding reduction of usable platform length.

It followed therefore, that all the influencing factors involved, concentrated the oil engine into the heaviest classes of transport vehicles, and in their field the advantages of low specific fuel consumption arising from the higher thermal efficiency of the diesel cycle, coupled with the fact that consumption was very much more closely related to load than in the case of the petrol engine, which is relatively less economical when running light, as for example when a lorry is running empty to collect a load or after delivering one, resulted in a very rapid swing-over to the use of oil engine power.

By increasing the number of axles still further and building eight wheelers (four axles) the gross weight, size and load-carrying efficiency were still further increased and the practical and fiscal disadvantages of trailer usage could be avoided. The eight wheeler was powered by the same units as the six-wheelers, with very little, if any, loss of performance, thanks to the development of supplementary gear boxes or special five-speed boxes, and it is probably correct to say that the oil engine was primarily responsible for the development of this maximum load carrier, with a legal gross weight of 22 tons, of which about 15-16 tons is pay load.

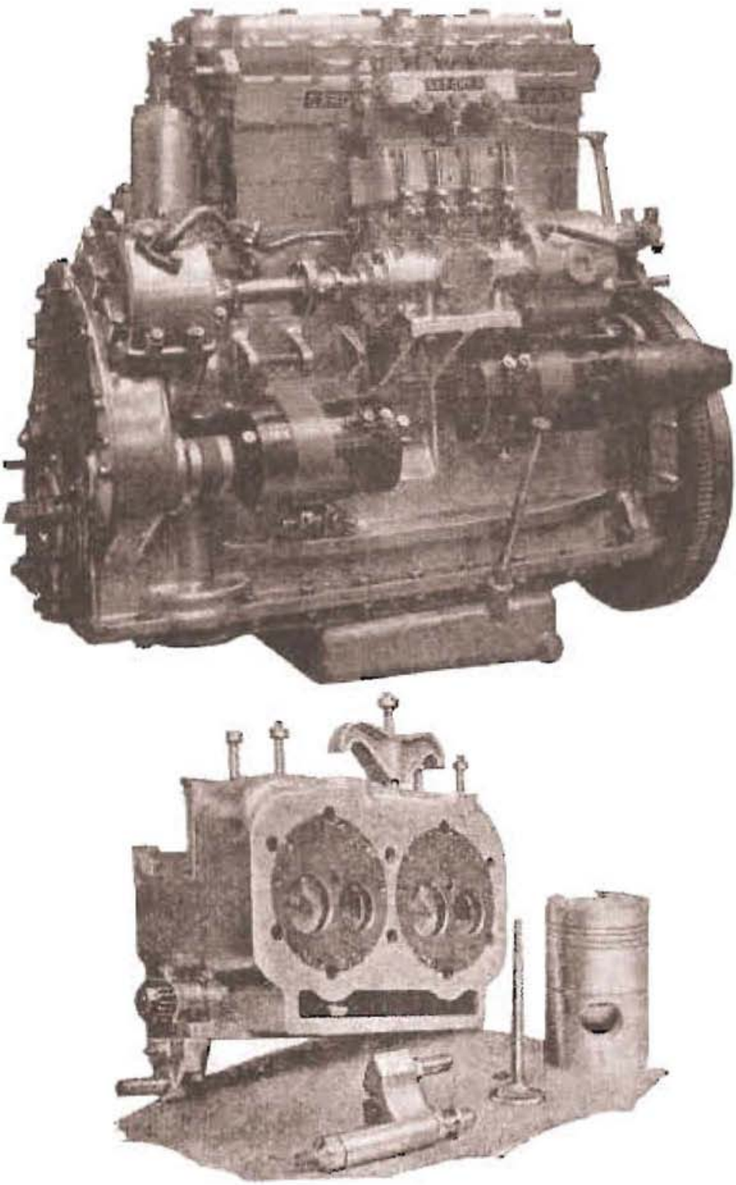
However, the advantages of the oil engine from the cost-of-running point of view in long distance haulage were such that attention was directed towards its application to the lighter class of goods vehicles. The allowance of a 30mph speed limit for vehicles of an unladen weight below 50cwt., was of much greater importance in developing this class of machine than the lower taxation rating, and petrol vehicles were produced in this class which regularly carried pay loads of 5 tons or over. The demand for the fuel economy advantages of the oil engine was pronounced among haulage operators, however, and in 1935 the Gardner 4LK engine was introduced. This engine followed the Gardner direct injection principle, but the construction was very advanced, the crankcase, cylinder block and cylinder head were of light alloy, with inserted cylinder liners of cast iron and bronze cylinder head plates in which the valve seatings were machined.

Yet in spite of its unconventional use of materials the design was in no sense freakish and the maintenance procedures involved was normal.

Another introduction suitable for the "50cwt. unladen" class of goods chassis was the Perkins range of engines, available in both four and six cylinder models. Perkins engines embodied a modified form of air cell combustion chamber and although the structure followed normal petrol practice in the comparable size classification, i.e., a combined cylinder block and crankcase in cast iron, and a cast iron head, pressures were kept within the limit imposed by the bearing dimensions and power was achieved by somewhat higher rpm that the average. A Leyland oil engine suitable for the lighter classes of that firm's goods vehicles, although it was not quite down to the "under 50cwt." category of power unit, was introduced. This engine departed from the Leyland direct injection principle and embodied an air cell, which was interesting in that it was formed half in the cylinder block and half in the head casting, a design which facilitated both manufacture and subsequent decarbonising procedure.

In the passenger field conditions were vastly different, for although a number of successful passenger conversions were carried out, there were certain drawbacks that can be summarised under the headings of performance, weight, and dimensions. Passenger vehicle legislation at that time governed overall dimensions, weight, and seating capacity and as the production of passenger vehicle chassis had for some time been in the hands of a limited number of manufacturers, this state of affairs had resulted in a certain degree of standardisation. As engine manufacture represents a fairly high proportion of the cost of vehicle production, the vehicle builders could hardly be criticised for not accepting proprietary oil engines as their only source of engine supply. One must recognise also that large-scale passenger vehicle operators, absorbed a high proportion of the manufacturers' available output, with the result that the sometimes-decided views of those operators as to what type of vehicle suited their particular requirements, had great influence on design.

Passenger vehicle operators in 1930 could with justification, claim to having reached a stage of reasonable efficiency. In the larger fleets regular maintenance schedules were in operation and the fleet engineers had brought costs down to a low level while maintaining a very high standard of reliability. Chassis standardisation in some cases was represented by fleets of many hundreds of vehicles, of identical type.



Pioneer lightweight oil engine, the Gardner 4LK was introduced in 1935. It is built of light alloy throughout, with iron cylinder liners and bronze head plates for the valve seatings

On the very high annual mileage of this class of vehicle the fuel economy of the oil engine was particularly attractive, and in consequence the position was closely examined. Performance, however, was a factor that retarded early development. Scheduled speeds in many cases did not allow any reduction in vehicle performance, particularly in the double deck field. The two most popular Gardner engines then available were the 4L2 and 6L2 (four and six cylinders respectively) developing 50bhp and 75bhp at 1300rpm.

The following table indicates the difference in performance compared with the accepted petrol standards of the same period.

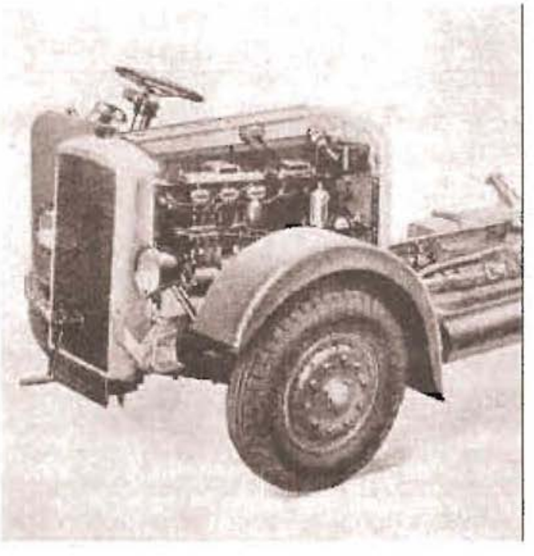
Engine	Maximum rpm	Gear Ratios and Speeds (**mph in italics**)			Tyres
		Top	Third	Second	
Standard petrol (4 cyl.)	2200	6.52 *38.75*	10.62 *22.92*	18.65 *13.05*	36 x 6
Gardner 4L2 (4 cyl.)	1300	5.2 *27.07*	8.84 *15.92*	15.44 *9.12*	36 x 6
Standard petrol (6 cyl.)	2500	7.25 *40.00*	13.63 *21.50*	23.84 *12.25*	38 x 7
Gardner 6L2 (6 cyl.)	1300	5.75 *26.23*	10.81 *13.95*	18.92 *7.97*	38 x 7

Weight increase due to the use of these engines involved a reduction of carrying capacity of approximately three seats. Whilst this was not a particularly serious limitation on single deck buses, it was of some concern on double deck vehicles. The first conversion of a double deck vehicle reduced the seating capacity from 52 to 48. This reduction was due in part to the increased engine weight and also to its dimensions.

A further complication to the adoption of any change necessitating seat reduction was the then increasing change over from trams to alternative forms of transport. For various reasons strenuous efforts were being made to increase seating capacities, and a good deal of attention was also focused on driving controls; any methods of simplifying driving were an obvious advantage when changing over tram personnel to bus driving. Torque converters, fluid couplings and epicyclic gearboxes were becoming extremely popular with city operators, but these refinements also added weight. In view of all these considerations it is apparent that circumstances encouraged investigation into the possibilities of producing lightweight oil engines comparable with petrol engines in both dimensions and performance.

AEC produced an ante-chamber type engine under Acro licence, while Crossley made some direct injection engines, but both subsequently adopted the Ricardo air cell system, that enabled speeds of well over 2,000 rpm to be obtained. Leyland proceeded more slowly and eventually put into production a direct injection engine with cavity piston which has been successfully continued to date. All these engines ran at higher speeds than the established 1,300rpm of the original L type Gardner. Meanwhile the introduction of the LW Gardner units provided a range of light, compact and powerful direct injection engines governed at about 1,700-1,800rpm. Subsequently AEC also introduced a direct injection engine, although the speed was reduced somewhat below the 2,000rpm of the corresponding air-cell units.

Fuel injection equipment progress, and to some degree increasing service knowledge on the part of the operators, all played their part in producing the present-day standard of oil engine efficiency.



Adoption of the five-cylinder Gardner LW engine in the Daimler chassis set a new standard of fuel economy for city passenger transport

MAINTENANCE EXPERIENCE

In the outline of development it is recognised that much of the early maintenance trouble associated with air chamber engines was due to building them down to petrol engine dimensions and weight limits.

The increased rpm of this type of unit was, to quote the critics, "likely to lead to bearing trouble." To some extent this might have been true, but it is accepted that the enforced limitation of bearing sizes was the main cause of any trouble experienced. In the early designs connecting rod bearings certainly caused "headaches" to service staffs. Compared with direct injection standards, pressures were up by 25-30%, but the introduction of lead bronze and other special bearing metals, accompanied by the use of hardened crank pins ultimately reduced those bearing troubles which, judged on petrol engine repair experience, were excessive. In other directions, experience showed that oil engines compared more than favourably; valve life was definitely improved, for example.

It was noticeable that injection equipment was less subject to failure than electrical ignition apparatus and carburettors. On the other hand lubrication was a matter that could not be lightly dealt with. Crankshaft breakages occurred in both direct injection and air cell types and the trouble was not consistent; identical machines appeared to vary, some fleets having many and others few failures.

Electrical starting equipment was not general in petrol fleets, and the fitting of starters to oil engines promised a further complication, quite apart from the added weight.

In dealing in detail with these variations from petrol engine maintenance, the reduction in valve attention represented a major improvement. Valve life on goods and passenger petrol vehicles ranged from 8,000 to 15,000 miles. The oil engine was capable of doubling those figures. In the case of air cell engines, full advantage could not be taken of this improvement since excessive lubricating oil consumption necessitated attention to pistons and cylinder assemblies at much shorter mileages.

Injection equipment generally speaking was trouble free, stoppages being mostly due merely to fuel supply failures. The high injection pressures on direct injection units limited the mileage intervals between injector changes as compared with air-cell units. Injection troubles were rare however, and this was probably due to the manufacturers' service facilities, which simplified component changes. Injector and even pump failures occasionally did occur, but experience indicates that neglect, and possible careless handling of filter cleaning and fuel storage, were chiefly responsible.

Certain of the early direct injection engines were prone to dilution of lubricating oil by the fuel. Design modifications and improved operating knowledge prevented any serious trouble developing. Air cell engines on the other hand showed the opposite effect, i.e., the lubricating oil thickened. Alteration in lubrication oil specifications and regular oil changes however, rectified this.

Crankshaft failures compared with petrol engines were frequent, the direct injection engine being the chief offender. While crankshaft failures today cannot be termed a regular complaint, they do occur. Recent practice in the matter of bearing clearances may have some relation to the early troubles, as main bearing allowances on early engines were excessive, judged by present day standards. Cylinder wear, compared with accepted petrol engine figures, could not be considered excessive. Cold starting troubles occurred, however, if 0.015 inches of wear was present in direct injection units, but air cell engines, being fitted with heater plugs, could be started reasonably well in spite of much greater wear than this, and the limiting factor, so far as cylinder wear was concerned, was lubricating oil consumption, thus the more favourable cylinder wear range was not actually of any great practical advantage. In passing, it is worth noting that, due to the lower operating temperatures, thermostats in water circulating systems were an absolute necessity if excessive cylinder wear was to be avoided.

The reliability of modern electrical equipment makes it difficult to appreciate some of the early troubles. Electrical starters were, of course, a new departure at that time in the heavy vehicle field, and when the increased power required to turn oil engines is realised, it is natural that difficulties arose. Direct injection units in many cases could be started without electrical aid, but particularly in the passenger group, in spite of severe limitations of weight, electrical starting equipment was generally standardised; however, the ease of starting of direct injection engines permitted the use of 12-volt units with their lower battery weight. But increased capacity and voltage was necessary for the starting of air cell types. Various layouts, including 12-24 volt series-parallel arrangements were tried, but finally full 24-volt installation became more or less the accepted practice.

The problem of battery manufacturers will be appreciated particularly in conjunction with passenger work, when, in addition to the heavy starting currents, lamp load increases were demanded by double deck operation, while at the same time the operator insisted on the utmost limitation of battery weight. Heater plug failures were frequent, but development has produced a satisfactory component in addition to improvements in the methods of quick location of defective ones.

In summarising progress and its relation to design in the light of modern standards, the equalising of rpm is a noticeable feature. Direct injection units have increased from 1,300rpm to speeds ranging from 1,750 to 1,900rpm. Air cell engines have been reduced to an average of 2,000rpm. The introduction of the LW type Gardner, with its reduced weight, higher rpm, and increased efficiency, opened a wider avenue in the passenger group. The Daimler company's development of a passenger chassis embodying fluid transmission, powered by a 5LW Gardner, which was adopted for one of the larges municipal fleets, set a standard of fuel consumption that was very attractive. It is true that the power output of the five cylinder engine limited it for double deck work to average city conditions, but it was a development that had a marked effect on subsequent progress. The adoption of oil power, which in the case of Company as distinct from Municipal operation, had been much more hesitant (except in Scotland), was accelerated by the use of this unit in the vehicles built by the Bristol Co.

During the earlier phase, it was still almost impossible to build a direct injection double deck 56-seater unless sacrifice of performance was accepted, and so the air cell was pre-eminent for a time, particularly on city operation where stops were frequent, schedule speeds high, and seats at a premium. The development by Ricardo of the Comet head improved this type by better fuel consumption and reduced noise in the lower speed range. This latter point was important also in that the operators of long distance touring coaches were demanding refinements of running, particularly as regards silence.

Co-incident with these varied developments increased vehicle and fuel tax resulted in a premium being placed on fuel economy so that in the passenger field, as in goods haulage, consumption began to be the only thing that mattered. More recently further development in injection equipment improved performance and fuel consumption on certain direct injection engines, and this apparently reduced the chances of the air cell engine's survival; thus, immediately preceding the outbreak of war the majority of passenger vehicle chassis produced were powered by direct injection units, while conversions of existing air cell engines to direct injection were being undertaken by operators.

Although the foregoing must, to some extent, be a sketchy review of oil engine progress, it will be apparent that today's standard of oil engine efficiency is not attributable to the development of a single type of unit. Present day design is similarly a combination of manufacturing and operating experience – experience gained as a result of continuous operation of various designs embodied in current vehicles. It may also be permissible to remind engineers and mechanics that the development of the modern road vehicle oil engine is an apt illustration of the influence of Legislation on the ultimate product, in spite of the manufacturers and operators.

Finally, in considering the effect of this development on maintenance, it is worthwhile to recall early predictions. It was suggested that the variations in layout had little in common with petrol engine construction, and therefore, major repairs would involve longer periods in the shops. In the light of present knowledge this view was not justified. In the case of vehicle builders' products, designed for typed chassis, little variation in overhaul times compared with petrol units is evident.

The total increased assembly time is in the region of 10%, bearings incidentally, accounting for the greater portion of this increase. If however, injection equipment is included, and the comparison embraces ignition and carburetion, assembly times are identical.

Reliability, registered as the ratio of involuntary stops to miles covered, in public service passenger vehicle operation has improved so much that it is about twice as good as the figures recorded for petrol vehicles. The duration of mileage intervals for engine attention has increased considerably on any standard achieved by petrol units, and the modern oil engine now offers these outstanding advantages with repair costs no greater than the petrol unit of similar size.

THE FIRST TRANSPORT DIESELS IN ENGLAND

(Compiled from Manufacturers' Records)

Date	***Type of Engine***	***Vehicles***
April 1928	Mercedes-Benz pre-combustion	Mercedes-Benz lorry
October 1928	Saurer Acro air cell	Saurer 5ADD lorry
December 1928	AEC Acro air cell	AEC experimental lorry (subsequently fitted to experimental works bus)
January 1929	Junkers two-stroke	Experimental lorry (LGOC)
June 1929	Leyland Hessleman spark ignition	Leyland experimental lorry
February 1930	4L2 Gardner direct injection	Single deck bus (Barton Transport Co., Beeston, Notts)
March 1930	Mercedes-Benz pre-combustion	Karrier single deck bus (Sheffield Corporation)
June 1930	4L2 Gardner direct injection	Leyland RAF lorry (FH Dutson Ltd., Leeds)
July 1930	4L2 Gardner direct injection	Single deck bus (Walsall Corporation)
September 1930	6L2 Gardner direct injection	Double deck bus (Leeds Corporation)
September 1930	4L2 Gardner direct injection	Pagefield lorry
October 1930	Leyland direct injection	Leyland experimental lorry
October 1930	6L2 Gardner direct injection	Karrier lorry
October 1930	AEC Acro air cell	AEC buses and lorries
December 1930	Crossley direct injection	Double deck bus (Manchester Corporation)

Editors Note – This extract has been taken directly from the book printed in 1942 and the written word, grammar and punctuation has changed quite significantly over the past 60 years.

Gardner & Steam

In Newsletter No. 4 we ran an article asking for information from members about the involvement of Gardner in the Gardner Serpollet steam cars. In truth this was a late or early "April Fool", but we would like to thank those of you who took the time and trouble to correct us. Below are a couple of the letters we received:

David French (Membership No. 8) July 2003

Dear Colin,

I felt I had to put pen to paper (am I the only person still using this form of communication?) in order to answer Tony Redshaw's question. Did Lawrence Gardner get involved in Steam?" GEF No.4 Summer 2003.

I think it is fairly safe to say no, and certainly not with the Gardner-Serpollet steam cars.

Lawrence Gardner died in 1890. Thomas returned to the family business and with his brothers soon realised the future lay with the internal combustion engine. The first of their own engines was completed and tested in May 1894.

Leon Serpollet designed a practical form of 'flash boiler' or steam generator which he patented in 1888. He worked with Peugeot and built a steam carriage powered by one of his boilers and engines. Peugeot though, soon turned his attention to the internal combustion engine.

Serpollet however persevered with steam and by 1899 was being financed by a <u>RICH AMERICAN NAMED FRANK GARDNER</u>.

By all accounts the cars were well engineered, quiet and fast. Seemingly, as with all steam cars of the period, control of the paraffin burner and hand-in-hand with this, the constantly changing demand on the boiler for steam when propelling a road vehicle, would prove to be the main problems encountered.

To return to a true product of L. Gardner & Sons, I thought you may be interested to know that my own size No.1 oil engine, celebrated its 100th birthday last year with a faultless run for over two hours.

According to the test sheet the engine was first started up at 2.30pm on the 11th August 1902. The event was re-enacted on the 11th August 2002. Start up again taking place at 2.03pm, give or take a minute for the blowlamp to bring the ignition tube to temperature.

I was quite disappointed not to be at Nottingham on the 21st and 22nd June. I hope you had a successful and enjoyable weekend.

Yours sincerely,
David French.

Photo of 1902 Size No.1 oil engine taken on 11th August 2002, the 100th anniversary of the engine's test. This engine was purchased and restored in 1975. Luckily it had survived complete, i.e., with original fuel tank, exhaust silencer and pressure tank for blow lamp, as so often these items became separated from the engine.

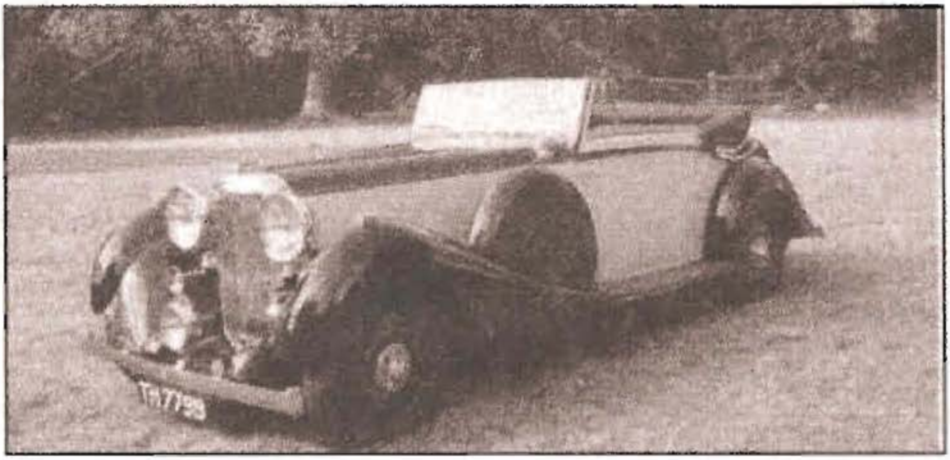
Doug Roseaman (Membership No. 179) 18th June 2003

Dear Lucy Short, editor of the Gardner Engine Forum newsletter c/o Colin Paillin.

I do not suppose I shall be the only person to write to you about the 'Gardner' in Gardner-Serpollet. The following is taken from 'Steam cars 1770-1970' by Lord Montagu of Beaulieu and Anthony Bird; published by Cassell in 1971. Page 82. '..........., for when Frank Gardner, an American, joined forces with Serpollet........' I am afraid you got the wrong Gardner – but it was nice to see pictures of steam cars in the newsletter!

Yours faithfully,
Doug Roseaman

Whilst on the subject of cars, many of you will be aware that Gardner experimented with their engines in motor cars, i.e., BCR's in the early days, but latterly 4LWs, 4LKs and 6LKs. The following appeared as an advertisement in a classic car magazine and on making enquiries, were told that the information supplied was incorrect at the time of going to press.



1936 LAGONDA LG 45 drop head coupe, a beautiful and rare example completely taken to pieces and rebuilt by Royals of Darlington 1981 and 1983 with photographic record. It has had minimal use since. Fitted with the ultra reliable Gardner 6 cylinder, 4.5-litre engine with 12 plug head. This car was very much advanced for its day and incorporates an automatic jacking system.

But......... does anyone know the whereabouts or existence of the 1932 Lagonda fitted with a 4LK, or any of the following vehicles.

1934 Invicta - Reg. TJ8805 fitted with a 6LK serial No. 31891
1932 Bentley - Reg. PF 6205 fitted with a 4LW
1932 Bentley - Reg. NK 9008 fitted with a 4LW
1935 Wolseley 21 – Reg. CSF 716 fitted with a 4LK
1950 Jaguar XK 150 – Reg. 919 LTJ fitted with a 4LK

and, I feel sure there are others.

Any information would be welcome.

Of course, there are also many modern conversions i.e., Range Rovers, Land Rovers, etc., and any information on these would also be of great interest. We would like to print your conversion story in our newsletter.

Regards
Tony Redshaw.
5 School Street,
Hillmorton,
Rugby,
Warks. CV21 4BW

Readers' Letters

Robin Ormerod (Membership No. 315) 13th July 2003

Dear Mr. Humble,

I write to send you particulars of my Gardner, which I did not have with me when I applied to join the GEF at Nottingham.

2LW/27001/1 - No. 251628
Order No. 901787
Checked/packed 17.08.94

It was a happy accident that I bought a boat with a Gardner in 1996. The engine had run for only a little over 50 hours then and 1350 hours now.

You ask for items of interest. I was at Land's End recently where there is an old lifeboat, which has two 6 cylinder Gardner engines. I am afraid I am too untutored in the area of Gardner to know which type, but I do know lifeboats a bit and I would say she was early 1960.

Kind regards
Robin Ormerod

The following letters were sent to us by Colin Meadows (Membership No. 224) and are original letters from Gardner to Colin from the 1950's

INTERNAL COMBUSTION ENGINES
AUTOMOTIVE RAIL TRACTION MARINE & INDUSTRIAL

GARDNER

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TELEGRAMS "THEOREM PATRICROFT ECCLES"
HEAD OFFICE & REGISTERED OFFICE
BARTON HALL ENGINE WORKS
PATRICROFT
NEAR MANCHESTER

YOUR REF
OUR REF WB/AFF/GA

October 19 57

Dear Sir(s),

Instruction Books Nos. 43·1, 56 (Modified), 56·1 and 56·2
Liquid Fuels and Lubricating etc. Oil Additions thereto.

Referring to paragraphs numbered:

32 and 32.1 in Instruction Book No. 43·1
27 and 27.2 " " " " 56 (Modified)
26 and 26.2 " " " " 56·1
26 and 26.2 " " " " 56·2

We have been requested by the Customs and Excise Department to draw attention to the fact that it is an offence to use as fuel, hydro carbon oils that have been rebated. Such rebated oils include lubricating oil, spindle oil and paraffin. Where any such use is contemplated, payment of full duty will be required and if in any doubt the Local Customs and Excise Officer should be contacted.

Yours faithfully,

NORRIS, HENTY & GARDNERS, LIMITED.

GD728

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13th February, 19 58.

Mr.C.Meadows,
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