

THE VETERAN AND VINTAGE VAUXHALL REGISTER

AUSTRALIAN NEWSLETTER

APRIL 2023

Hello everyone.

Another two of Peter Anderson's sketches with the first one showing Graeme Peters aka Grim arriving at the Queensland Vintage Motor Club's room for the monthly meeting. The E Type had caught fire in the engine room along the way to the meeting hence the fumes still rising above it.



The second sketch is of Grim sitting in his 30-98 reading the local rag with headlines depicting a celebration of the 200th issue of the Club magazine of which Grim was the editor.



Leigh Whitfield from Victoria is a regular contributor with articles and photographs for the newsletter and answering my calls for help. Leigh is allowing me to reprint two articles he wrote some time ago on 20-60 and 14-40 Vauxhalls. Both are fairly long articles with photographs so I will include the one on 20-60's in with this issue and the one on 14-40's in the June newsletter. Not knowing all that much about either models I found both articles both interesting and factual.

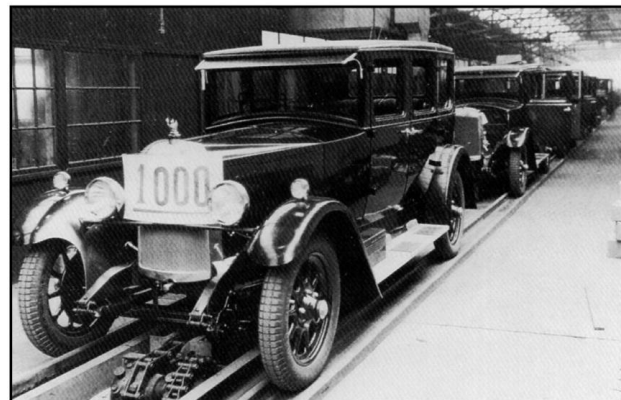
The photograph below shows Leigh with his LM 14-40 on the Vauxhall Rally in Merimbula N.S.W. in 2018 showing Rob Merryfull and Neil Heilbrunn the 14-40's engine room. The following article was written by Leigh Whitfield on the history of the 20-60 Vauxhall.



VAUXHALL 20-60 DESIGN & ENGINEERING

In the early 1920's Vauxhall were going to extraordinary lengths to find a profitable market for future manufacture. All of their then current models were of pre WW1 design and starting to fall behind the opposition's new offerings. C. E. King updated the D and E Types with an OHV conversion to their sidevalve motors and he also designed a new model, the 14hp was introduced which became the 14/40.

At the same time they dabbled with the motorcycle project which came to nothing, the TT Racing cars were a technical wonder but not for general production and the H Type - the successor to the 30/98 was canned. This still left them with updated but outdated cars which were only really stopgap models until something profitable and new could be developed.



THE 1000TH VAUXHALL R TYPE 20/60 PRESS PHOTOGRAPH. 06.28

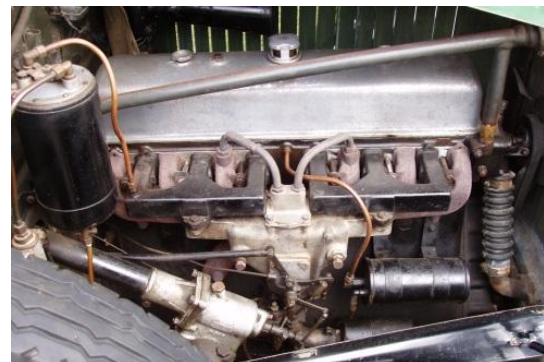


Two all new cars were proposed in early 1924, the OHV six cylinder 20/60 and the sleeve valve 25/70 - these two models were designated the R Type and S Type. The R Type 20/60 was basically a completely new design to be a replacement for the mass market 14/40 while the S Type 25/70 was to be their greatest ever luxury car, aimed squarely at the top of the market then dominated by the likes of Rolls Royce and Daimler. The plans for both cars were already laid down by the end of 1924 and while the 20/60 was originally scheduled to be introduced

in October 1926 this plan fell apart as a result of inept management, hopeless cost control and a physical lack of cash flow which was compounded by the unbelievable decision to give the development & launch of the 25-70 an absolute priority over everything else. The 14/40 was given a quick revamp in late 1924 to prolong its production life until the 20/60 could be finished. The 25/70 was first mentioned to an astonished public on the 4th September 1925 and was released at the Olympia motor show in October while in the background negotiations between Vauxhall and General Motors were to begin only days later.

The first new car to be launched by Vauxhall following the takeover by General Motors was the 20/60. In terms of chassis and mechanical engineering the 20-60 followed the Vauxhall custom & practice of conventional, sound and well proven principles designed and built to a very high standard - which makes the 25/70 disaster even more surprising.

At this time the whole industry was moving to cast iron, six cylinder, coil ignition engines and Vauxhall followed this development. Designed by C. E. King the smooth 2762cc 6cylinder engine used a cast iron block which also incorporated the crankcase, the overhead valves were operated by aluminium rockers and steel push rods with double valve springs and an aluminium rocker cover. Pistons were cast iron with 3 rings, one of which was a scraper ring, attached to a dynamically balanced high tensile drop forged steel crankshaft which was supported on 9 main bearings instead of the more normal 5 or 7. Crankcase ventilation was via a breather in the oil filler cap. The drop forged steel camshaft was case hardened, supported by 3 bearings, and was chain driven in tandem with the dynamo. Ignition advance & retard spark timing was controlled automatically with the distributor positioned at the side of the engine and drive taken off the camshaft, all electrical components were Lucas 12volt. Inlet and exhaust manifolds were mounted on the right hand side of the block with the inlet manifold featuring a 2 branch mixing



chamber using a V shaped casting inside heated by the exhaust. Fuel feed from the rear mounted 14-gallon tank was achieved using an Autovac tank on the dashboard, the carburettor was a Claudel Hobson with built in power jet. Lubrication was pressure fed by pump with an overflow system for the timing chain & sprockets. The cooling system was regulated by a thermostatic valve. Engine, clutch and gearbox were assembled as one unit and mounted at three points. The single dry plate clutch has a central external spring and roller spigot bearing, the gearbox was a redesign of the 14/40 box utilising a cast aluminium housing and gears were changed by a central floor mounted, gated lever. The suspension was by half-elliptical springs front and rear, those at the rear were underhung. The front springs were flat-set, held out-of-centre and shackled forward, dampers were fitted front and rear with steering by Marles cam and roller.

With investment from General Motors the 20/60 could probably have been launched on schedule, however preliminary examination by GM engineering staff seconded to Luton were horrified by the proposed braking system. Although Vauxhall had built up a reputation for quality engineering over the years it didn't include brakes which were always a weak point. With the 20/60 the situation had reached a new low with a proposed system which, despite using a myriad of rods and linkages, were still hopeless.

GM ordered the design completely changed to cable operated four-wheel braking, this redesign was carried out at Vauxhall and the production 20/60 had the best mechanical brakes seen to date on a Vauxhall but with 132 moving parts between pedal and shoe it seems to have been a very Vauxhall solution. A central mounted handbrake lever operating a band transmission brake was mounted directly behind the gearbox, the band could be adjusted by a threaded rod. Drive was via an open propeller shaft using a flexible fabric universal joint at each end to the semi-floating spiral-bevel rear axle.

Much has been made of the 20/60 design being based on the American Buick Standard Six Sedan which used the new B Platform first introduced in 1926. Interesting as this may be it is totally unfounded, there certainly were GM influences at work prior to, and even after, the launch of the 20/60 but none of it had anything to do with the body design. Like many of its contemporary British rivals, Vauxhall did not have a dedicated design or styling department. Instead, the exterior body design process was intertwined with the main engineering drawing office where perhaps 2 or 3 draftsmen would be singled out as having a talent or flair for a cars appearance, one such man was Arthur Bratchet who would later work in the dedicated Styling Department set up by the sculptor Eric Kennington. Kennington was often used on a consultancy basis during the 1920s before being fully employed by Vauxhall. Charles E King had replaced Laurence Pomeroy as Chief Engineer at Vauxhall in 1919 and he was certainly heavily involved in the 20-60 design and would have



given the final approval & sign off.

It is safe to say the 20-60 was a wholly British design and indeed even though it was most certainly the first car released after the takeover by GM, it is equally the last car to be designed by Vauxhall.

Leigh Whitfield. With thanks to Vauxpedia.

*A Sincere Effort to meet
Australia's Needs*



The New 20-60
Vauxhall Six

GENERAL MOTORS INTEREST IN OVERSEAS MANUFACTURE

By the early 1920s Vauxhall were an established and well respected producer of quality cars in a similar vein to Sunbeam and Humber, although they lagged behind in some areas such as using side valves instead of overhead and rear and not all wheel braking. However, Vauxhall were like their competitors in that they all suffered from a common, and fundamental, problem; the low productivity which prevented price competition with producers such as Morris, Austin and Ford, which had massively intensified in the early 1920s. An attempt to remedy this was made by Vauxhall early in the decade by reorganising the Luton factory in a half-baked attempt at an assembly line but only for the fitting of engines and chassis ancillaries. Despite this, production was still hopelessly slow compared to the full mass production techniques used by the largest producers such as Ford and Austin. In 1925 Leslie Walton, Company Chairman, stated that Vauxhall was not equipped, trained or had any desire to produce large quantities of mass produced cars and would continue the policy to produce a “reasonable” number of high class cars at a “moderate” price. In any event Vauxhall did not have the capital available at the time to make the huge investment that mass production would have involved. The prospect was also looming in 1925 of the redemption of £300,000 Short Term Notes taken out in 1920 to keep Vauxhall afloat and, in addition to large bank overdrafts, meant the financial standing of the Company was beginning to crumble. Walton called a special shareholders meeting where he

stated that the improvement in profitability for the previous two years was not enough to reduce the overdrafts or set aside funds for payment of the Short Term Notes. The company was backed into a corner and as a result it was proposed to create and issue First Mortgage Debenture Stock for the sum of £350,000, this effectively meant mortgaging all of Vauxhall's fixed capital and assets. The shareholders had already seen the capital reduced from £600,000 to £300,000 by writing off 10/- shillings on each share in 1923 and none had received a dividend since 1919. However, the shareholders had no real choice because if they failed to accept the offer Vauxhall Motors Ltd would go into liquidation. Meanwhile, General Motors Overseas Operations (GMOO) had felt sufficiently confident in the British car market that it had set up an assembly plant in 1920 at Hendon Aerodrome to build cars from imported CKD (Completely Knocked Down) kits from the US, these included Buicks, Cadillacs, Chevrolets, La Salles and Oaklands. CKDs were used because a lower import tax was levied compared to importing complete vehicles giving GM an advantage over other imports. The operation did suffer from the same round of competitor price cuts of 1921 and the growth in low price models from Morris, Ford and Austin cut GM sales. In 1924 a survey was conducted by GMOO head James Mooney and clearly pointed to the tax on engine size, insurance and servicing costs placed the cheapest Chevrolet at a £112 disadvantage compared with the equivalent Austin, not much in today's money but a huge difference at the time.



This was the incentive for General Motors to give the go ahead to GMOO to seek the acquisition of a British manufacturer, in the meantime the Hendon plant was turned over to the production of Chevrolet trucks with locally built bodies, and it was this vehicle that was later to form the basis of the first British built Bedford truck.

After assessing all their requirements GMOO chose Austin as being the ideal operation to take over. Negotiations started in 1924 and were initially favourable, Herbert Austin was amenable as his company was having difficulties in raising capital for its own expansion plans but there was always the backdrop of criticism from the national and motoring press which resented the prospect of well-known British companies passing into American hands. After months of deliberations in early October 1925 the plan was scotched by dissenting Austin directors who opted for a more modest expansion plan rather than relent to American ownership.

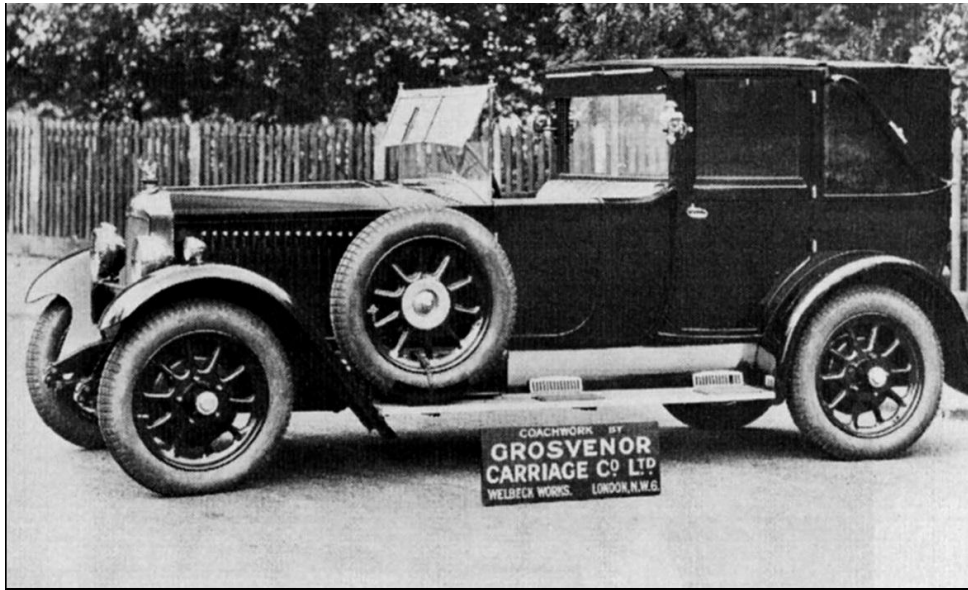
Wasting no time, on 21 October 1925 negotiations started with Vauxhall Motors Ltd. The issue of the First Mortgage Debenture Stock for the sum of £350,000 at 7% had not been very successful and the Vauxhall Board was more than willing to entertain GMOO's offer of

\$2,575,291 for the purchase of the ordinary shares. This enabled the 300,000 ordinary shares to return to their pre 1923 value of £1 each, former shareholders also had the option of purchasing up to 300,000 preference shares at £1 each with a guaranteed dividend of 6%. Old ordinary shareholders were paid a bonus of £210,000 which combined with the above made a total of £510,000 invested in Vauxhall. The deal was agreed in principle within days of talks starting and was completed in full on 24 November 1925, through Morgan Grenfell, GM's Merchant Bankers, who had also dealt with the Austin proposal.

A new 7-man board of directors was appointed on 16 November 1925; 4 British - Leslie Walton remained as Chairman and joint Managing Director, Percy Kidner as joint Managing Director, and Board Directors Mr Bisgood and Mr Petch; 3 American Directors were appointed – James Mooney, also head of GMOO, Edward Riley assigned from the GMOO Hendon operation and Alfred Swayne from GMOO headquarters in Detroit. Within General Motors in the US the deal received a less than favourable reception and vociferous disagreements over Vauxhall continued until 1928, major policy decisions were delayed by Alfred Sloan, GM President, who wanted to move cautiously until a clear policy had been worked out for all overseas operations. This caution did not stop GM trying to purchase Morris Motors Ltd for \$11 million in 1926, but again they were rejected, and then to compound matters GM entered into an auction with William Morris and Herbert Austin for the bankrupt Wolseley Motor Company: Morris won that battle. There were plenty of GM insiders who thought that a manufacturing presence in Europe was not needed at all but an added complication was the acquisition of Adam Opel in Germany on 30 March 1929. The strategy was the two companies would both compete with each other in the same way that GM divisions worked in the US but Opel would be the base for European manufacturing and Vauxhall for Britain and the Empire which at the time covered 38% of the world. Unfortunately, financial losses at Vauxhall for 1927, 1928 and 1929 did not help Vauxhall's case but the depression that followed the Wall Street Crash and foreign countries putting up heavy import tariffs gave General Motors an advantage with Opel and particularly with Vauxhall and their Empire territories.

What was to have a profound effect on Vauxhall was the attitude of the press towards the Company after the takeover by GM. Most vociferous was Edmund Dangerfield the editor of "The Motor", his attacks resulted in a double page advertisement in the magazine entitled "The future of Vauxhall Motors" which emphasised that it would remain a 100% British institution and the Managing Director, Chairman, staff, workmanship and product were British. Significantly it was only signed by Walton and Kidner. This did not stop the criticism and Vauxhall ended up withdrawing all advertising and loan of test cars for nearly two years. This atmosphere also dictated that the GM connection was not mentioned in any Vauxhall advertising and sales promotion for several years.

GM felt it was wise under these circumstances to have British nationals as the main company figureheads but despite this Mooney was anxious to have a senior GMOO man "on site" to this end he appointed Bob Evans as joint Managing Director with Kidner while Walton remained as Chairman. This proved a disaster and



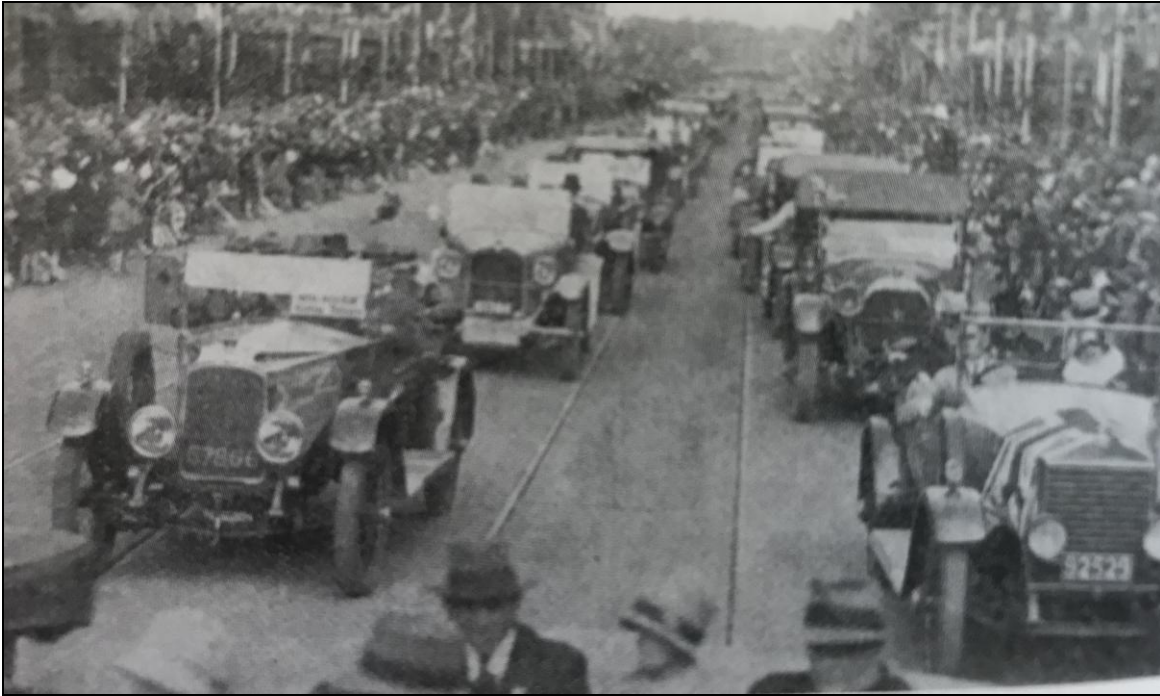
VAUXHALL R TYPE 20/60 TOWN CAR BY GROSVENOR PRESS PHOTOGRAPH. 11.27

Kidner resigned in 1928 leaving GM in the rather unenviable position of having an American in the MDs chair. Once the decision had been made for Vauxhall's expansion Sloan personally told Mooney to pick an Englishman to run Vauxhall, the choice was an inspired one, Charles Bartlett was MD of the GMOO Hendon operation and was quintessentially British and so in 1929 he was appointed sole MD of Vauxhall.

Whilst on the subject of 20-60's, Mark Wakeham 14-40 owner from Sydney sent me the photographs below given to him by a guy in Victoria. Mark was interested to identify the car with year and model for the guy.



Phil Virgona sent me the photograph below of what looks like either a D Type or early OD Vauxhall. It is from the Norm Darwin book on 100 years of GM Vauxhall in Australia book.



Anzac Day in Melbourne 1927

Below are some photographs of cars that were on the Vauxhall Rally in the Hunter Valley last year.



Greg Robert's D Type D3688



Greg Mackie's Grosvenor Bodied 30-98 OE235



Griffin on the radiator cap of OE235



Rob Merryfull's 14-40 M673



Peter Ward's 23-60 OD1107

The photograph below is of Fifty Bob A210 outside my factory at Ingleburn. Alisdair Lockhart, Richard Walton and I drove the car down from Boolaroo on the Central Coast and brought it to my factory at Ingleburn where it was picked up that night and taken to Melbourne for the reinactment of its record breaking run from Melbourne to Sydney. Sadly the car did not complete the run and returned unceremoniously to my factory on a trailer.



Alisdair Lockhart - Dave Stuart - Richard Walton

The photograph below was taken alongside the Hawkesbury River at Wisemans Ferry where we were organising a V.S.C.C.A. event with a fly in of Tiger Moths to the grass airstrip on the property. The event turned out a flop on the day as it was too windy for the Tiger Moths to make the flight down from Luskintyre in the Hunter Valley. The following year with no wind it was a great success.



23-60 OD494 and 30-98 OE53

I couldn't resist showing the photograph of OE238 I took when I visited David Vinall last year at his home in South Australia. Unfortunately David died last year however I can tell you this was a lovely example of a late model 30-98 and one of the most original cars I've seen. It has a well documented history with the V.S.C.C.A. and was owned by Jack Jeffrey, John Crouch, Frank Dent and Harry Tompsett all early members of the Club. Harry Tompsett sold the car to Laurie Vinall who was David's father and well known campaigner of OE108 Black Bess now owned by Neil Heilbrunn.



OE238

The photograph below was taken at Euan and Wilga Coutts' property in Royalla south of Canberra. Richard and Emi Walton in 30-98 OE53 and Mary and I in Gunnar Sundell's Speed 6 Bentley had stayed the night with Euan and Wilga and we off that morning to the breakfast run with the Canberra branch of the V.S.C.C.A. Euan and Wilga's 23-60 OD793 was then as shown with its red body and black guards and polished bonnet. At the time I had Antique Tyres and Penrite in Sydney and was custodian of the Sundell's collection of 16 cars which included the Speed 6 and 3 litre Bentleys together with their two 30-98's, E274 as well as OE188. I think you will agree the mix was just about right when it comes to picking a car to take out on a run and as you can imagine they all got a turn.



OD793 - Speed 6 Bentley - OE53



Euan and Wilga with OD793 in current colours

The 23-60 is known as Bluey

Mike Hipkins sent me the article he wrote on his experience with wheel wobble or wheel shimmy on his 30-98 OE162. I am sure there are readers that have experienced this at some time whilst driving a vintage car and can concur that it is a very frightening and unpleasant experience. I remember driving John Giddy's OE116 and it suffered from this problem making it impossible to stop the steering wheel shaking without bringing the car to a stop.

I hope you find the first eight pages of this article interesting and can use it as a reference if this problem occurs with your Vauxhall.

THE FETTLER'S NOTES

WHEEL WOBBLE (particularly in Vauxhalls 30-98 and 23-60) (April 2020)

A. INTRODUCTION

Front wheel "wobble" or "shimmy" is a disease that affects many beam axle cars but also some with independent front suspension. Early VWs and Land Rovers were fitted with dampers to control wobble and I have been told that other moderns continue to fit dampers.

It seems that Vauxhalls 30-98 and 23-60 are particularly susceptible, so this note is based on the control of wobble for these cars. However, much also applies to other vintage cars with beam axles.

Wobble can be disconcerting to downright terrifying when experienced at speed. With Vauxhalls, it usually occurs at 30-35mph, which is most inconvenient as it is the urban traffic speed on often crowded roads. However, the "natural frequency" can be lower or higher. It can be started by rough roads, potholes and railway crossings or can occur for no apparent reason. Some temporary relief can sometimes be achieved by braking with front brakes and/or slight weaving by the steering.

Wobble is the front wheels moving uncontrollably from side to side and at times with significant deflections. There is a related disease called "wheel tramp" where the front wheels bounce up and down, left side to right side, and at times with the tyres leaving the ground. In combination with wobble, tramp is highly dangerous as it is more likely to occur at speed.

In this note, I first review Arthur Archer's notes on the subject and then proceed to expand on them and propose a slightly different order of priorities in attempting a cure.

There are two factors for which I have not been able to gain much information as to their effects on wheel wobble. The first relates to Vauxhalls for which the Ackerman Principle for steering was not adopted and the other is "scrubbing distance" or "scrub radius". But more on these later.

In the following, there are several references such as "See Separate Note". These Notes can be found in "The Book" of Vauxhall Technical Notes.

In the following, it is suggested that measurements of the various factors described should be recorded for future reference.

B. ARCHER'S NOTES

Arthur Archer wrote one of his excellent notes on Vauxhall wobble and reading that before starting to tackle correction/control of wobble would be worthwhile. Copies are included in "The Book".

(a) Fault Factors/Locations

Archer lists the following aspects to consider :

1. Wheel balance;
2. Shock absorbers;
3. Tyre pressures;
4. Castor angle;
5. Axle bolts;
6. Spring shackles;
7. Steering ball joints;
8. Steering box;
9. Chassis cross-member.

His view is that 1 and 2 are the most important to have right. I'm not so sure, as explained below. Recently, I found a front wheel on my car to be grossly out of balance but experienced no wheel wobble.

(b) Steering Geometry

Archer has also stated the "standard" steering geometry for Vauxhalls as :

Castor	2-3° - can vary
Camber	86½° (see attached drawing)
Toe-in	5/32" to 3/16"
Scrubbing distance	not known

Clearly the geometry should be checked and put right but read on for a while.

(c) Slack/Damping

Archer deals with several areas where slack occurs either due to inappropriate adjustment or wear over the years. As I see it, "slack" allows a movement to start, rebound and, as with many mechanical systems, they resonate to their natural frequencies with oscillations growing in intensity.

Some slack is, of course, needed for "joints" to move smoothly. However, a little friction is also needed to "damp" the movements.

Unfortunately, nice lubrication of joints from an engineering point of view can eliminate the friction that is providing sufficient damping to control wobble.

Years ago on a rally, my car had no wheel wobble until heavy rain lubricated the track rod joints.

More on damping/lubrication later.

B. Archer's Notes (continued)

(d) Scrubbing Distance

Scrubbing distance or "scrub radius" is the distance measured at ground level across the width of the car between the centre of the tyre tread and extension to ground level of the centre axis of the king pin/swivel joint. Archer makes no reference to scrubbing distance and nor do other commentators on wheel wobble.

However, I suspect that scrubbing distance has an influence on the tendency for wobble to occur but I cannot get any guidance on this matter. Related factors are outlined in F (d) below.

C. SLACK LOCATIONS

There are many locations for slack in the steering system and below I expand on Archer's list. It is my view that slack is likely to be the main cause of wobble in an otherwise well-maintained car. The locations listed are specific to Vauxhalls but other cars will have similar components/locations.

(a) Steering Box

- worm to wheel clearance/adjustment;
- worn shaft bearings;
- cross (rocker) shaft bearings and shims;
- cross shaft to drop arm taper joint;
- steering box clamp (30-98s only);
- steering box mounting bolts to chassis.

(b) Steering Links

- drop arm to drag link ball joint;
- drag link to front axle steering arm ball joint;
- steering arm to swivel housing taper joint;
- track rod steering arms to swivel housing taper joint (left and right);
- track rod ball joints;
- track rod ball tapers to steering arms.

(c) Swivel Joints (Vauxhall calls king pins "swivels")

- adjustment;
- swivel bearings;
- bearing housings;
- bearings fit to pin.

(d) Wheels and Hubs

- hub to wheel centre (worn splines);
- hub bearings and shimming.

C. Slack Locations (continued)

(e) Chassis and Springs

- front springs, bolts to axles;
- front springs, rear shackles (worn pins or bushes);
- rear shackle blocks, rivets/bolts to chassis;
- shock absorber mountings and bushes;
- shock absorber friction adjustment;
- chassis cross-member rivets/bolts;
- kidney box support bar rivets/bolts.

(f) Others

- loose clamping/fitting to damper, if fitted;
- the other joints not in above.

The probability is that more than one slack joint is too loose and as wobble occurs it will shake more joints loose. A good set-up can develop slack by normal use. Recently, I had a slight recurrence of wobble after a run of about 1500km. It was corrected by minimal tightening of both drag link joints.

Section E below deals with inspections and tests for slack.

D. CORRECTION OF WOBBLE - SEQUENCE

(a) Preliminaries

Archer rates wheel balance and shock absorbers as critical, so start by checking them and also increase tyre pressure by 5-10 psi.

However, I differ with Archer on the off-car method of setting of Hartford-type friction shock absorbers. See separate note. For a start, just tighten them up a bit. A road test will indicate whether the problem is solved but the probability is that it will remain if other slack points have not yet been found and corrected.

(b) Tackling Slack

What to do? In summary, it is suggested that all the areas where slack can occur be inspected and checked while an assistant turns the steering wheel back and forth. The order of checking does not matter and, even if looseness is found in one area, continue to check all. The types of checks to be made are described in section E below.

(c) Steering Geometry

The next range of investigation relates to steering geometry and help in measuring, adjusting and correcting is likely to require outside/professional help and experience. For these reasons, tackling the slack spots first might correct the problem and geometry adjustments might not be needed.

D. Correction of Wobble - Sequence (continued)

(d) Road Tests

So that one can end up with an assessment of the problem areas, it is best to do frequent road tests on a test circuit known to have produced wobble, certainly after any changes made to balancing, slack or geometry.

E. SLACK INSPECTION AND CORRECTION METHODS

As noted above, an assistant is needed for many of the inspections :

(a) Steering Box

- Note and record the left to right movement of the steering wheel rim that does not move the bottom of the drop arm at the drag link joint.
- With finger, feel for any in/out movement of the drop arm hub to steering box cross (rocker) shaft. The play can be inside the box or at the taper joint of the drop arm.
- Look for radial movement where the steering column shaft enters the top of the box and where the cross shaft leaves the box.
- Steering wheel rim to-and-fro movement of 3" is starting to become excessive and box should be removed and adjusted. The worm-to-wheel clearance is adjustable but problems with the rocker shaft involve the bearings and shimming. A separate note deals with this. It needs skill, patience and time and is probably best left to someone who has done it before.

(b) Steering Links

- Slack is highly likely to be found in the ball joints and its correction can be the main factor in controlling wheel wobble.
- Remove gaiters, if fitted, from all joints and, with finger at joint, feel for axial movement as steering wheel is turned back and forth.
- Observe the joints during steering wheel movements.
- If there seems to be excessive movement, unclamp the end nuts, or loosen the large lock nuts if link has the hexagonal-end caps.
- Jack up front axle and progressively tighten joint end caps, while turning to and fro, until the force at steering wheel increases, then back off $\frac{1}{2}$ a flat (i.e. one twelfth of a turn)

E. Slack Inspection and Correction Methods

(b) Steering Links (continued)

- Reclamp and tighten lock nuts and check steering not over tightened. If the balls have worn slightly oval, the joints will tighten on lock away from centre and elimination of slack might not be possible.
- Joint friction can provide needed damping but over lubrication might reduce its effect.

(c) Steering Arms

- Observe the steering arm taper joints to the king pin swivel assemblies. There are three taper joints: one at front end of drag link and on the arms connected to both ends of the track rod.
- It is unlikely that these large taper joints will be loose but it has happened. If there is rust around the joint, they are probably loose and moving.
- In any case, tighten with large socket. If split-pinned and no rust marks leave alone.

(d) King Pins/Swivels

Vauxhall calls king pins "swivels" and probably rightly so, because they are in their design rather different from king pins in other cars. See attached drawing.

Vauxhall swivels have a centre shaft or pin keyed to the axle eyes. The stub axle 'y' pieces are supported/controlled vertically by a thrust bearing at the top and radially by two roller bearings above and below the axle eye. There are several places for wear to occur in the bearing housings and also in the bearings themselves.

More conventional king pin assemblies consist of a fixed pin and the stub axle swinging on bronze bushes while vertical support can be as simple as bronze washers.

The following comments relate mainly to Vauxhall swivels :

(1) Preliminary check of swivels

Jack the wheels up, observe and feel for any movement at the swivels as the wheels are lowered and take the car's weight. If there is, then there is slack and it's a potential source of wheel wobble.

Also check for relative movement between the axle eye and the swivel assembly. Check with car jacked up and helper turning the steering wheel. I have heard "clonks" on this test.

With conventional king pins, a re-bushing and perhaps replacement of the pin is needed to eliminate this slack. With Vauxhalls, the excess movement might be controlled by adjustment but internal wear might have occurred and repair might be required. This might need professional help.

E. Slack Inspection and Correction Methods

(d) King Pins/Swivels (continued)

(2) Swivel adjustment

Rather unexpectedly, the vertical load is taken at the top with the centre pin/shaft in tension. The pin is keyed into the axle eye.

The top vertical thrust bearing is housed in a brass ring with a hex grease nipple on one side of it. The bearing is adjusted by a large hex nut with lock nut above. With wheel/tyre on the ground, slacken the lock nut then screw down the lower nut until the grease nipple is hard to push round. It is not until this that the thrust bearing is actually taking the weight of the car.

This might be the intended design situation and could be satisfactory if there were no wear slack elsewhere in the assembly.

However, this remarkable swivel has another feature. It can become a damper against wheel wobble. This involves tightening the large nut a bit more or until the brass ring/grease nipple cannot be pushed round. This pre-loads the thrust bearing and provides damping.

Now tighten the top large lock nut using two spanners so as not to over tighten the pre-load. This is not easy, as the spanners need to be relatively thin open-enders and one needs to be no more than about 9" long or the chassis will get in the way.

Check, with front jacked up, that the steering has not been over tightened. If so, the adjustment may need to be backed off a bit.

(3) Lubrication of swivel

The bearings of the swivel should be lubricated, the top thrust and radial roller bearing via the grease nipple mentioned above.

The lower roller bearing is lubricated via a hex grease nipple on the top of the axle beam a couple of inches in-board from the axle eye. Grease gets there by a rather tortuous route but don't over do it as surplus gets into the brake drum.

Unfortunately, lubrication at the top can reduce the damping effect and previously controlled wobble might return. The suggestion is to slightly increase the bearing pre-load but perhaps decrease it after a while as it can make steering feel heavier.

E. Slack Inspection and Correction Methods

(e) Wheels and Hubs

- With axle jacked up, grasp tyre at top and bottom and observe/feel any movement of the stub axle wheel bearings.
 - Grasp front and rear of wheel and attempt to move. Also have assistant turn steering wheel. Movement at wheel bearings or wheel to hub might be felt.
 - Lower jack and look for any movement between brake drum and back plate. Also try to assess whether the wheel centre moves relative to the outer face of the brake drum.
 - Any movements detected need further investigation and correction and could include :
 - bearing damaged or loose on the stub axle or in hub,
 - inadequate shimming of the bearing or a loose nut on stub axle,
 - worn hub or wheel centre splines or loose wheel nut;
 - The hub bearings are conventional radial load bearings not tapered rollers, but they are required to take side loads.. It is essential to fit the tapered spacer and shims, if necessary, to eliminate end-float with the end nut fully tight. However, care must be taken to avoid over tightening, which can damage the bearings. How this assembly is meant to work is not immediately obvious. Assessment and assembly needs thought and care. See attached drawing. There is a separate note that deals with wheel hub adjustments.
- Remove wheel and inspect the taper on the inner end of the hub splines. If it is shiny, there is movement between the hub and wheel centre;
- Apart from replacing hubs and/or wheel centres, one can apply "Loctite Bearing Mount" to the shiny taper and refit wheel. This can delay replacement for a while.

(f) Shock Absorbers

Shock absorbers are dampers and their main purpose is to damp potential up/down road spring oscillation but as the springs get agitated during wheel wobble their damping properties can also help to control wobble and perhaps, even more, control "wheel tramp" if that should be part of the wobble.

- Grasp the friction disc ends of the units, move sideways and see if there is excessive movement at the bushes. Some movement is acceptable. If necessary, the bushes or rubber mountings should be replaced.
- Check that the mounting pivot bolts are tight to chassis and front axle. Use good spanner or socket to check and tighten, as some nuts can be hard to access.

I will include the final eight pages of Mike's article on wheel wobble or shimmy in the following newsletter.

FOR SALES AND SERVICES

Unmachined castings available from Dave Stuart mobile 04 2828 2360.

Aluminium elbow water transfer from radiator to the water pump.

Aluminium water transfer from head to the block.

Aluminium Two tone Klaxon horn bracket.

Aluminium vertical drive Klaxon horn bracket.

Brass Rotax Clarion horn bracket.

Aluminium top and bottom plate to the inlet manifold.

Aluminium C.A.V. side light plinth.

Brass hood rest.

Brass securing bolt and nut for hood to top of windscreen

Aluminium Jaeger driven speedo pulley.

Brass bracket for securing luggage rack to the rear dumb iron.

Wing nut to secure top windscreen to the top of the post.





CRANKSTART ENGINEERING John Kent (w) 03 5798 3053

Parts - not exhaustive

Blade drive couplings for D, E, early OD and OE.

Bottom Water Elbow castings in alloy.

Head Gaskets - pending for OD and OE.

Timing chain conversion to roller chain for D, E, OD and OE models.

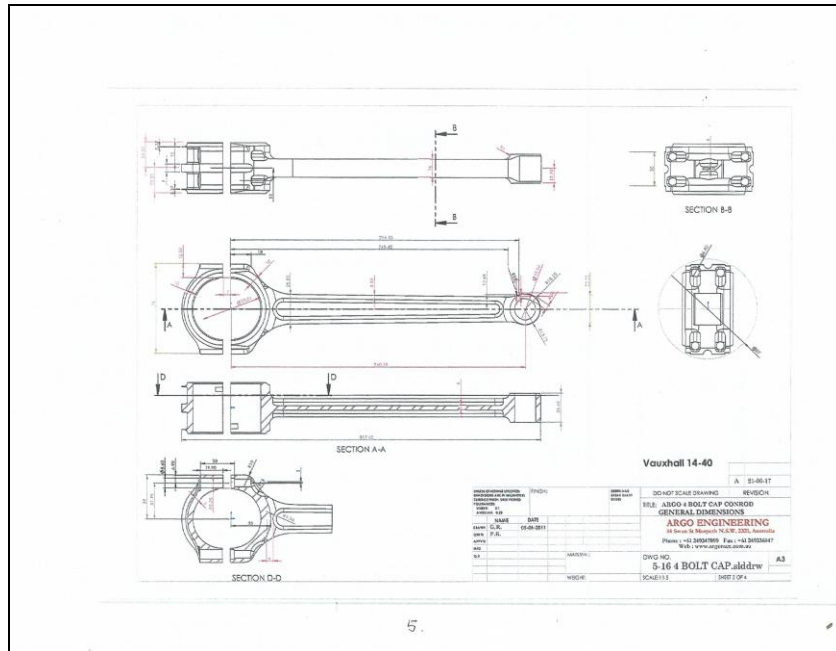
OE Cylinder Heads.

OE exhaust manifolds.

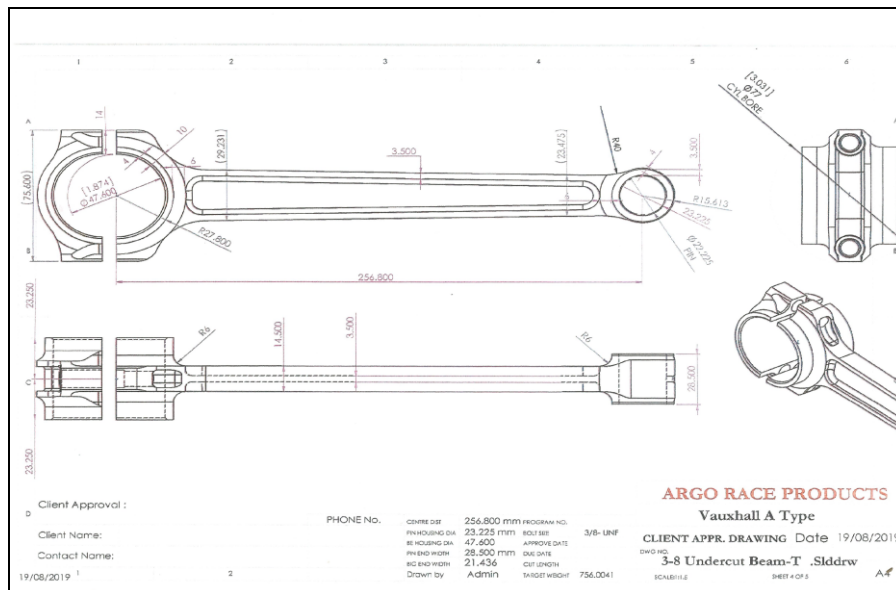
Services

All aspects of restorations and maintenance including sub assemblies.

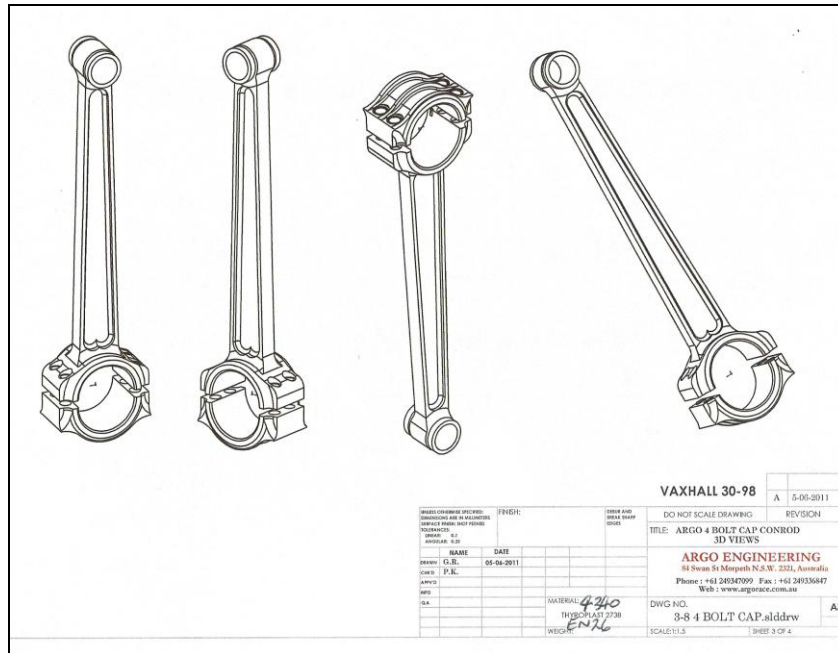
ARGO ENGINEERING – 84 Swan Street, Morpeth N.S.W. Phil and Adam Ph 02 49347099



14-40 Conrod



A Type conrod



30-98/23-60 conrod

For enquiries or placement of orders for new steel conrods direct contact on the above phone number to either Phil or Adam is required. You will need to discuss whether the rods are to be machined for poured or slipper bearings – they can do both.

I can advise that the ex Ray Moore 23-60 OD759 has sold and is staying in Sydney with it's new owner Kent Davis. Kent is the new cars sales manager at Sanderson Mercedes at Rushcutters Bay in Sydney. His father owned Boyded Motors at North Wollongong in the 1960's and owned OD1001. This 23-60 was sold to Bob Bradbury in Sydney then onsold to Jeff Taylor who at the time lived in Dapto and worked in the bank. He was transferred to Maryborough in Queensland and drove the car up there as a young 20 year old Bank Johnny. Jeff's campaigned the car for many years in Queensland before selling the car and it now resides in the UK.

We will see more of OD739 as Kent is keen to join in with our Vauxhalls rallies.



OD759

Hi Dave

Just wondering if you might be able to circulate some details about my 14-40 that I'm selling. As you know its 1927 Vauxhall 14-40 LM (LM5167 - one of the last, hence details such as the timber dash). It is a 3 owner Bud Smith's 14-40 for sale car and has been in the Vintage Car Club of Queensland for over 60 years. It has been restored twice in that time however. It presents very well, is in good mechanical condition and has 5 brand new Firestone tyres. I've attached a couple of pictures. If any members are interested and would like more photos or details they can contact me on 0431 739 985. I'm asking \$40,000 and can include free delivery between Brisbane and Sydney and surrounds.

Kind Regards

Bud Smith

mobile: 0431 739 985

email: alistairtrentsmith@gmail.com





With the recent passing of David Vinall his 30-98 OE238 is being sold and is now available for immediate purchase. The car is in Adelaide and is a lovely example of a late model 30-98 with a long history dating back to the 1940's with the V.S.C.C.A. I have attached what is known of the car's owners.



The price will be **\$375,000.00 firm** and this will include the few spares that are depicted in the photograph below.



If you are interested in viewing the car please contact Phillip Levi on mobile 0499147911 or email edlee@iinet.net.au

The 30-98 Register has the previous owners as : Jack Jeffrey, John Crouch, Frank Dent, Harry Thompson (1947) Laurie Vinall, David Vinall 2022. John Crouch was unable to supply any history of the car prior to it being purchased by Jack Jeffrey. Jeffrey, Crouch, Dent and Thompson were all early members of the V.S.C.C.A.

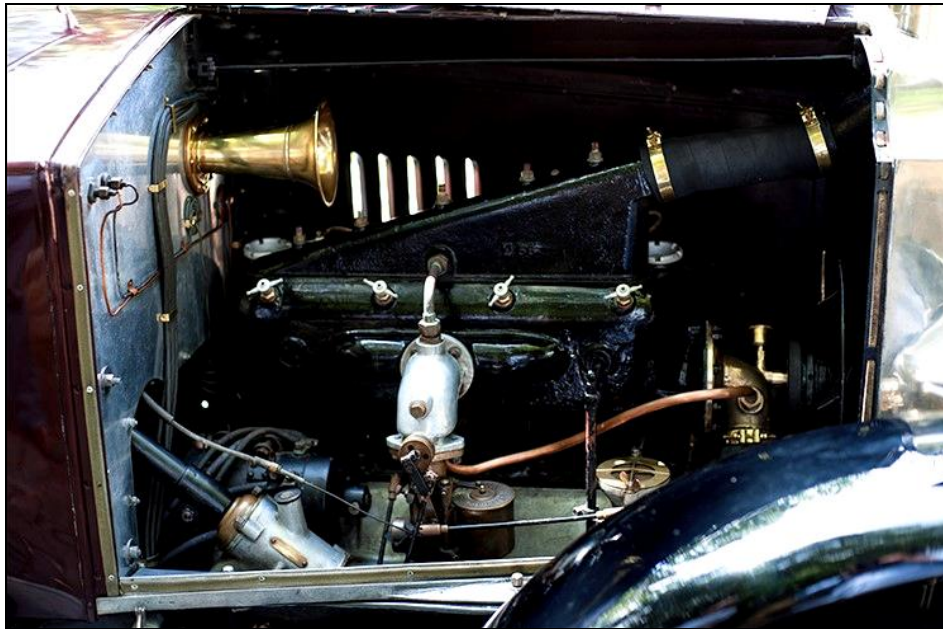
Murray McDonogh from the A.C.T. now has the opportunity of purchasing a 30-98 which is his real passion. In doing so he will now sell his recently purchased D Type chassis D3190 engine D3337A. Since purchasing the D Type Murray has fitted new valves, valve springs and guides as well as having the cam followers overhauled. The car has actually done very little mileage since it was restored in South Australia by the previous owner.

It is a lovely example of a D Type in very nice patina with all the correct instruments and fittings.

Murray is asking \$95,000 for the car.

Contact Murray direct on mobile: 0412774351





There are three lovely Vauxhalls advertised in this newsletter so please get the word out to anyone you know who may be interested in purchasing a vintage Vauxhall. I fear the 30-98 from South Australia will be UK bound if someone out here doesn't rescue it, so dig deep and make a serious offer to Phillip as I am sure you will be rewarded.

Finally thank you to all who contributed to this issue of the newsletter with a special thanks to Peter Anderson from Queensland for allowing me to use his topical sketches.

I hope you all enjoy some time out on the road in your Vauxhall now the autumn colours are here.

Dave Stuart.

Mobile: 04 2828 2360

Email: tubby2360@gmail.com