



# The Oz Vincent Review

*Edition #26, May 2016*

The Oz Vincent Review is a totally independent, non-profit, e-Zine about the classic British motorcycling scene with a focus all things Vincent. OVR, distributed free of charge to its readers, may be contacted by email at [OzVinReview@gmail.com](mailto:OzVinReview@gmail.com)



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# Welcome

Welcome to this latest edition of The Oz Vincent Review

This month's front cover photo taken by Russ Murray, is of OVR reader Phil Canning piloting his immaculate Shadow at the recent Broadford Bike Bonanza. The bike was recently and expertly restored by Australian, Greg Brillus and it is immaculate in every respect. Phil told OVR that the bike was much better and faster than expected and went very well for the session - and was very exciting to ride.

In just a few days OVR is off once again touring, this time to Sri Lanka where in 1937 3 "A" series twins were shipped to, never to be heard of again. You may be sure I will be keeping a sharp look out - but as a consequence of my travels the next edition of OVR may be slightly delayed, and that gives you more time to submit YOUR item for inclusion in the next edition - what about it??.

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Melbourne, Australia.

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## Letters to the Editor

Hi Martyn, I have a tale of disappointment to share; In 2015 following extensive email and telephone contact I purchased a new set of Vincent crankcases plus a large number of other parts from a non-German resident of Germany, paying cash up front. Regrettably when the new cases eventually arrived the quality of the machining was such that they needed more work to fix than my old cases; plus many key parts that I had ordered and paid for had not been supplied. When I sought a refund for the non-supplied parts I received a very blunt and rude email of refusal. Almost eight months has past and I am still trying to negotiate my way out of this mess. So - before you part with your hard earned \$\$\$ it pays to check out the reputation of potential suppliers - I did not do this and it has been a lesson hard learnt.

Peter, Vincent Owner, Australia

*Peter, within OVR is a list of service providers who readers have recommended as providing good service. If/when OVR becomes aware of a significant and confirmed reduction in the customer service of any listed service provider, then that provider is removed from the OVR listings. Martyn*

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Hello Martyn, how are you? We've been so busy finishing off jobs and packing up and storing things here at the Woody's Hydroblast shop; There is a sense of renewal though. After 43 years in the engine and restoration business, we are taking a break to renew and rebuild our shop. We look forward to assisting your readers with their projects at our refurbished workshop around August / September. Will let you know when (and where) we reopen.

Regards, Greg Wood

*More information is in the Service Providers listing at the end of this edition of OVR. Martyn*

# VINCENT-HRD NUMBERING SYSTEMS

## ENGINE NUMBERS

Vincent owners regard the engine as the most important part of the motorcycle, and therefore the engine number as determining the model and year, when non-original parts have been fitted or a machine has been built up from a mixture of parts or models. After World War II, the Vincent-HRD factory adopted a code and numbering system which carried a great deal of information in the engine number. The number appears on the left-hand side of the crankcase just below the (front) cylinder barrel. A typical engine number is in the form F10AB/1/8180 (1000cc Rapide). The code is interpreted as follows:



**Engine type symbol** F = 4-stroke, T = 2-stroke

**Capacity** (in 100cc) 10 = 1000cc, 5 = 500cc, 0.5 = 50cc (eg, Firefly cyclemotor)

**Material symbol** A = aluminium alloy (a few special engine types used M for magnesium alloy)

**Purpose symbol** B = bicycle (other options include M for marine or U for utility)

**Design number (divider)** Between the obliques, a new number for a fresh design or an added letter for modification to a design, as follows. **1000cc** /1/ = Rapide, /1A/ = White Shadow, /1 B/ = Black Shadow, /1 C/ = Lightning, /2/ = D Rapide or Black Knight, /2B/ = D Black Shadow or Black Prince (some /3/ crankcases were sold by Harper Engines, and some /4/ crankcases by Holders, successors to Vincent Engineers, and /5/ HRD-embossed cases have also been manufactured by Bob Culver/Derek Sayer). **500cc** /2/ = Meteor, /2A/ = Comet, /2B/ = Grey Flash, /3A/ = D Comet or Victor (numbers appear to start at 2 because 1 is for the rare Speedway motor)

**Engine number** Commencing at 3 and ending at 11134 (excluding /3/, /4/ and /5/ replacement cases/engines) A prospective buyer is well advised to look at the number carefully, because it is all too easy to 'upgrade' a model by stamping in an extra character, and there are even stolen Vincents in circulation. However, do not automatically assume that an irregular stamping is a fake. The first part of the number was stamped on routinely before machined castings were put into stores, whereas the final designation and serial number were only stamped when the engine was built — and frequently with different stamps. If in doubt, check with the Vincent Owners Club.

## FRAME NUMBERS

Frame numbers, too, indicate the original model information in code, all commencing R as a result of being derived from the initial Rapide design. It should be noted that both upper frame member (UFM) and rear frame member



(RFM) were stamped with matching numbers, although some present-day machines have been built up with non-matching parts. The UFM is usually stamped on the left-front of the steering head, and the RFM on the left-hand rear lug. Most machines were delivered from the factory with a frame number 1900 larger than the engine number, although this is not an absolute rule, and many earlier models had a difference of, for example, 1990. The numbers decode as follows:

**Prefix series** R = Series B, RC = Series C, RD = Series D

**Design number (divider, 500cc only)** /1/ = Meteor or Comet, /1A/ = Grey Flash

**Frame number** Usually 1900 larger than the engine number Suffix B = Black Shadow, F = Black Knight, B/F = Black Prince

## PART NUMBERS

The part numbering code used by the factory has been retained by most Vincent-HRD specialists, and is therefore still very useful. The system had the useful property of using prefixes which indicated roughly where on the machine the part belonged, acting as a cross-check with the description, and also indicating where a common part has been 'borrowed' from elsewhere in the design. Simple nuts and bolts received a simple number only (a remnant of an abortive numbering scheme which threatened to give the four identical brake shoes four different numbers!). The suffix system has been usefully extended by modern parts suppliers to indicate variations from the original design.



**Prefix** C = clutch, E = engine, ET = engine (twin), F = frame, FF = front fork, FT = footrest, G = gearbox, H = hubs, K = tool kit, O = oil pump, PD = primary drive, PR = proprietary parts (eg, Lucas, Burman)

**Number Suffix number** When a part was redesigned or modified, it was given a /1 suffix, and this number increased with any subsequent modification. Usually the later part is an improved modification, but occasionally it is an adaptation for use else-where on the machine (eg, A22/1 is the long version of the oil banjo bolt A22, for use at the oil filter position)

**Suffix letters** F = front, R = rear, AS (sometimes S) = assembly, (S) = service exchange, PM = part machined (ie, not ready for use)

**Modern suffix** An expansion of the original numbering for modern replacement parts: SS = stainless steel version, mod = design modified from original

## DATING \*

Year	Engine	Frame	Year	Engine	Frame
1946	19	2019	1951	8250	10150
1947	400	2300	1952	9570	11470
1948	1400	3300	1953	10000	11900
1949	4980	6880	1954	10300	12200
1950	5730	7630	1955	11134	13034

\* Numbers given are the last made for the year.

*Source: J. P. Bickerstaff with assistance from material prepared by P.E.Irving & P.Richardson*

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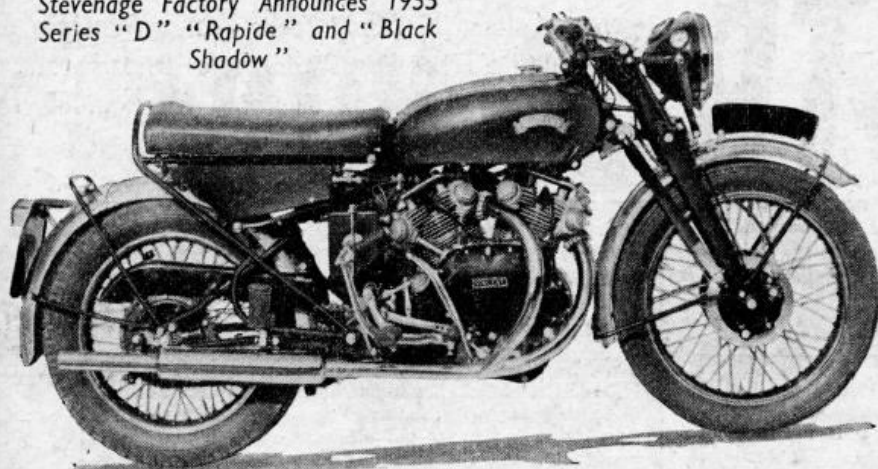
## Recent Sales of Vincents in Australia

The following recent Australian sales of Vincents have been reported to OVR.

1. Black Shadow- in storage for the last 25 years, internal condition unknown, engine a non-starter, flat and perished tyres, non-matching numbers, A\$104,000
2. B series Rapide, non matching numbers – basket case, totally unassembled (with the motor and gearbox in parts), some parts in rough condition, other parts clearly missing, A\$40,000
3. C series Comet, non matching numbers – basket case, again totally unassembled (motor also unassembled) with some parts apparently missing, A\$25,000

**"NAKED" VINCENTS now AVAILABLE**

Stevenage Factory Announces 1955 Series "D" "Rapide" and "Black Shadow"



ANOTHER example of the adaptable policy of Vincent Engineers (Stevenage), Ltd., Stevenage, Herts, is the announcement made on Thursday last that the recently introduced series "D" streamlined 1,000 c.c. models are to be available in unstreamlined form and with the well-known names of "Rapide" and "Black Shadow."

All the mechanical changes made to the streamlined models, described in *Motor Cycling* of November 4 last and shown at Earls Court and other subsequent exhibitions, are incorporated in the "naked" versions. That variations have been made in the make-up of the machine is inevitable but, broadly speaking, they are limited to the housing of the speedometer, ignition switch, ammeter and lighting switch in the shell of the Lucas F.700 head lamp (all of these items, incidentally, being interchangeable with those on the streamliner), the provision of conventional mudguarding and the subsequent fitting of registration number-plates front and rear.

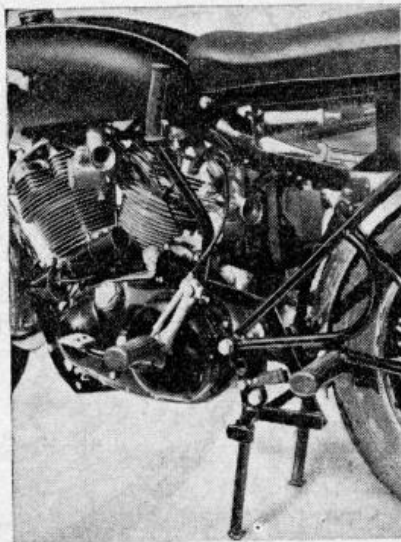
The frame, forks, suspension, engine modifications and the like are exactly as for the streamliner and it was stressed by Mr. Philip Vincent that should a purchaser decide, at a later date, to incorporate the glass-fibre panels with his series "D" "Rapide" or "Black Shadow" the job would be a simple one, for the fixing points for these panels are retained throughout the range. In its "bare" form the new series "D" types are fractionally lighter than the "C" models of 1954.

When a representative of this journal was invited to Stevenage to see these innovations there was no thought that he would be given the opportunity of riding one, but once again *Motor Cycling's* man was given the signal honour of being the first technical journalist to sample the latest departure—and the experience of riding a "Rapide" can only be described as exhilarating.

A cautionary word from Mr. Vincent not to indulge in prolonged high-speed bursts because the engine was still a little new, and the writer, riding without protective clothing of any kind except safety helmet and goggles, motored away at what he considered a gentle pace to "get the feel" of the machine. Having regard to the 1,000 c.c.s beneath him, he built up the revs. in the indirect gears

(Above) The 1955 "Rapide" twin as it appears listed without streamlined enclosure. The price is £270 16s. 8d. plus P.T.

"Motor Cycling's" reporter seizes the chance to try one of the new "Rapides" and finds it well up to reputation. (Below) The massive 998 c.c.o.h.v. engine, the ignition coil and the hand-operated central stand.



as would be normal for a "500," snicking through the changes easily and quietly until the engine was turning over nicely and pulling its 3.5-to-1 top-gear ratio. No gear-box noise was audible at any time in the indirect ratios and, motoring gently along in top, a chance glance at the speedometer showed a steady 75 m.p.h. A tweak at the throttle and the magic "ton" was on the clock. Rapid "rolling-off" for some heavy commercial transport ahead produced no heart-stopping moments and on this occasion the dual front brakes only were used!

Back at the works, words exchanged with Mr. Vincent and racer Ted Davis brought the offer of a ride on a streamlined "Black Knight," the enclosed version of the "Rapide," and this was, very naturally, accepted. Still without protective clothing, the "ton" was once more clouded—only this time the writer's jacket was not wrapped around the back of his neck by the rush of

wind! What might have at first appeared to be rather a handful proved to be quite the opposite. Once under way, the machine behaved impeccably—and by under way is meant from 1 m.p.h. upwards. The most impressive characteristic was the virtually complete absence of noise from the motor, only the fascinating off-beat from the exhaust and a slight whisper from an additional visor fitted to the top of the Perspex windscreen being audible. At no time was the rush of wind—which is usually considerable in the 80s—felt and the earlier experience of being quite out of touch with the actual road speed was even more pronounced on the streamliner.

There can be no doubting the strategy of the Vincent concern in marketing these two unstreamlined models, which will meet the needs of the ultra-sporting motorcyclist. The basic price of the "Rapide" is £270 16s. 8d., which with purchase tax rises to a round £325, while the "Black Shadow" price is £295 16s. 8d. or £355 including P.T.

# The Unified Theory of Motorcycle Steering – Part 1

*A OVR contribution from Andy Luck, Australia*

I call this paper the “Unified Theory of Motorcycle Steering” because it combines descriptions of my identified 3 modes of motorcycle steering plus my recent additional understanding of the transition between Mode 1 and Mode 2 steering. It also covers an alternative explanation of countersteering that you can find on the web. I strongly disagree with this alternative!

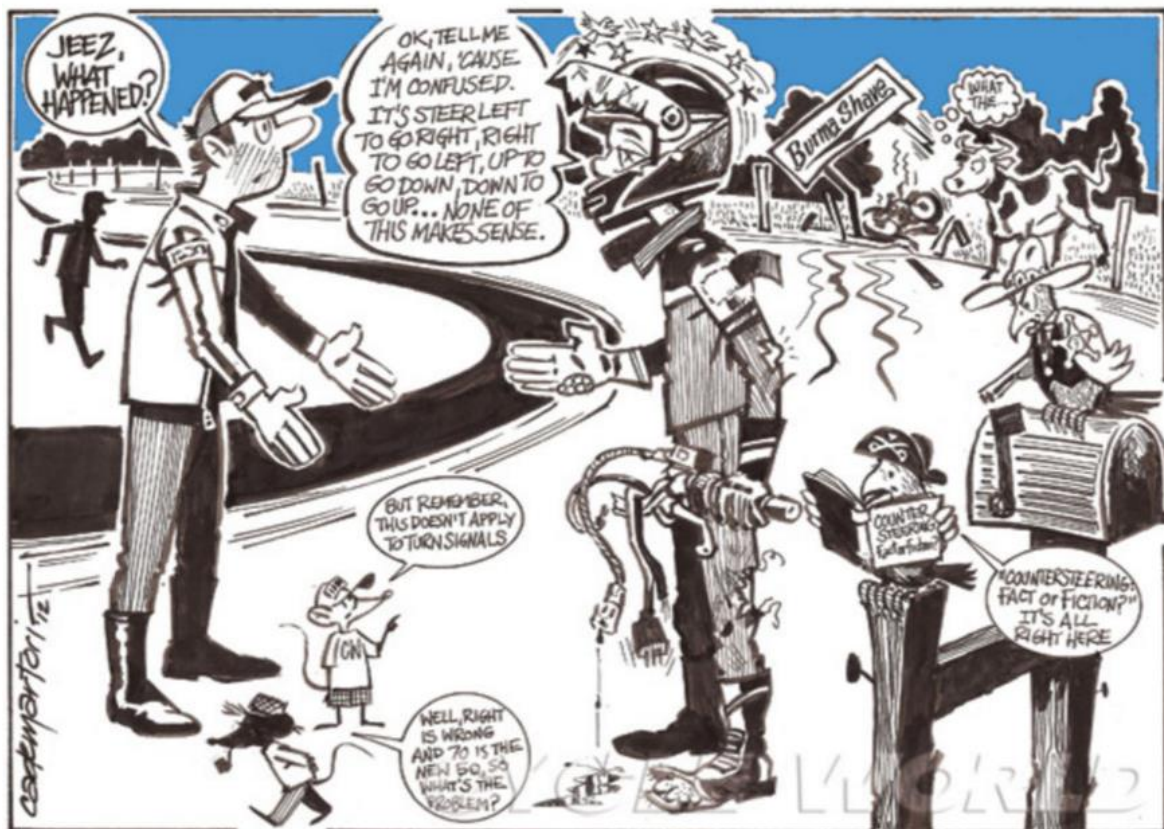
The first thing I should do is define what I mean by these terms.

Mode 1 steering occurs at slow speed where the rider turns the handlebars left to go left and right to go right. Trials riders normally operate in Mode 1.

Mode 2 steering occurs at higher speeds when the motorcycle is upright and travelling in a straight line and the rider initiates a left turn by turning the handlebars to the right and a right turn by turning the handlebars to the left.

Mode 3 occurs where the motorcycle is leaned over and moving in a curve and the rider wishes to straighten up. It was my realisation that I could not explain how a motorcycle could 'fall up' that prompted my thinking about the whole subject of motorcycle steering.

Modes 2 and 3 are 2 modes of Countersteering, a term that I first heard in the early 80's in an article written by Keith Code. Keith is the world's paramount motorcycle trainer and the founder of the Californian Superbike School and claims to be the first person to identify and describe countersteering. At the time I gave a talk to members of the Motorcycle Riders Association in MRA House in Brunswick on Keith's article, and to a man, they thought I was nuts! Today we are all familiar with the term, or at least I hope we are!

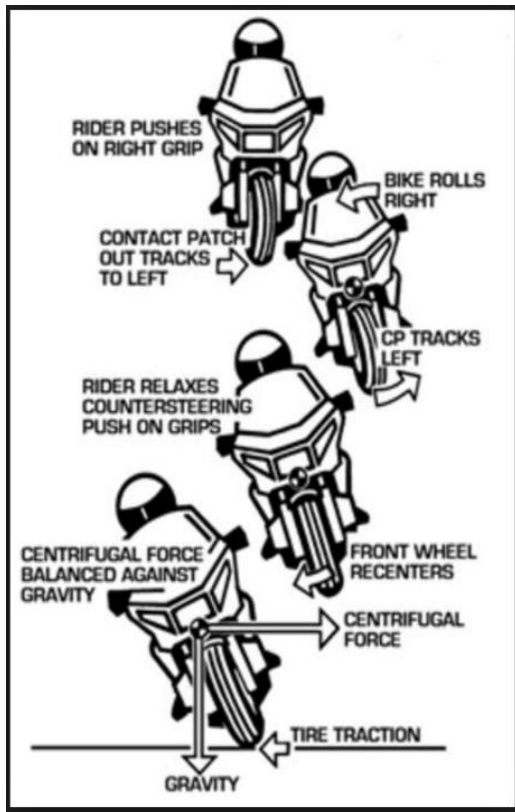


I do not say that countersteering has not been fully explained in some learned tome somewhere, I only say that I have never seen an explanation that fully explained it to me, so the following is my explanation of motorcycle steering.

There is no math in this paper, partly because, if there was, your eyes would glaze over and you would lose interest, and partly because, as a Civil Engineering dropout from the 1960's, I am not able to give it! I am prepared for persons more learned than I to take this apart and prove or disprove my theories but I am sure there is value in here somewhere and after you have heard me out I hope you will think so too!

Countersteering is not used in Mode 1, here the rider 'positive steers' but I will leave any further explanation until I have covered Mode 2 and Mode 3.

The explanation of countersteering in Mode 2 is the easiest to understand. This is where the rider travelling at a speed above the 'transition point' between Mode 1 and Mode 2 'counter steers' to initiate a turn from the straight ahead position, and is the only Mode for which I have ever seen any explanation. In fact, I have seen two explanations for this, both of which I believe are applicable, and are covered below.



Countersteering is so named because, on a single track vehicle, to initiate a right turn you actually turn the handlebars to the LEFT. This is the opposite of the steering input required on a tricycle, which is why you found it so hard to graduate from your tricycle to your first bicycle as a child. You kept turning the wrong way! A good job Dad was running along behind ready to grab the saddle! Eventually your BODY learned to do it right, but, in many riders, this has remained unconscious knowledge.

So, to initiate a turn to the right you countersteer to the left by turning the bars to the left slightly. In practice you PUSH on the right bar rather than pull on the left bar, but this is a moot point. To train riders to turn a motorcycle the mantra is "Push Right, Lean Right, Go Right". You will now be taught this at riding schools.

OK, what is happening in Mode 2? After the steering input, the Steering Head of your motorcycle (through which the forks pivot) moves to the right of the centre of gravity. How far to the right is determined by the speed and duration of your steering input, the further the steering head moves to the right, the more violent the resultant steering response will be.

There are two questions here, what is the force moving the steering head to the right and what is the force causing the steering response?

Question 1. What is the force moving the steering head to the right?

There are two possibilities, first the physical effort you put into your push, acting at the tyre/road interface. The effect of this is related to the friction at the tyre/road interface and the amount of Rake and Trail designed into your motorcycle ( Rake is the angle of the steering head and trail is the distance from the tyre contact point to the intersection of a line through your steering head to the road surface). The amount of Rake and Trail determines how far the steering head moves, and how much effort is required to move it. I am not qualified to explain the subtleties of Rake and Trail but, as it is obvious that a zero rake and trail (ie with a vertical steering head) would have zero to little effect, then, as these measurements increase so must the effect of moving the steering head to the right. I think we are all aware that the values of Rake and Trail are very significant in determining how quickly a motorcycle steers and how stable it is. This tells me that this 'possibility' is of major significance.

This effect occurs at any speed, including when the motorcycle is stationary, something you can easily demonstrate for yourself with a pushbike. So this possibility can be upgraded to a certainty, agreed?

Rather embarrassingly I can report that in late 2000, at the end of a quick stop in traffic, I failed to notice that I had actually stopped and tried to correct my line by countersteering. Result? The bike fell on its side, so fast I did not even get my foot off the footpeg! I can therefore absolutely confirm that countersteering works at zero speed! Pity really...

The other possibility is Gyroscopic Precession, the force generated when a spinning gyroscope is deflected from its axis. This is much favoured as THE cause in many explanations of countersteering, but I intuitively feel that the significance of gyroscopic precession is overstated. First, what is gyroscopic precession? Again, I am not qualified to explain to you the subtleties of gyroscopic precession, so what follows is my understanding. If you want the *why* and the *how* you must read up on it yourself! The *what*, however, I will 'explain'.

When a spinning gyroscope, in this case your front wheel, is turned to the left, a force is generated at right angles to the turning moment (ie to the right) and vice versa. In our example, attempting a turn to the right, the wheel is turned left, generating a force to the right which moves the steering head in that direction. If you have ever conducted the school experiment of holding a spinning, weighted, bicycle wheel by its axle whilst sitting on a rotating stool you will remember that turning the wheel caused you, and the stool, to rotate. So Gyroscopic Precession can be empirically experienced. Another possibility can be upgraded to a certainty, agreed?

OK, that is *what* gyroscopic precession is and it obviously assists us with the desired turn. However, as the countersteering **effect** works at zero speed, gyroscopic precession cannot be PRIMARILY responsible for the countersteering effect. In fact, as the faster you are travelling in a straight line the GREATER the countersteering effort required to initiate a turn, I feel that the gyroscopic effect of your rotating wheels tends to RESIST initiating a turn. This partly explains why bikes continue merrily when the rider has fallen off, the bike frequently recovering from an unstable position. Also, as I read that reducing the rotational mass of wheels gives QUICKER steering, I am sure that the effect of gyroscopic precession is overstated.

However, on a return motorcycle trip across Australia in 2010, I experienced an epiphany which showed that I have not been giving gyroscopic precession the credit it deserves in its influence on motorcycle steering. Shortly outside of Port Augusta, following a string of traffic through a long section of roadworks at speeds of 20 to 30 kph, I suddenly realised that, in order to keep my balance, at one moment I was making minute steering adjustments left to go left and right to go right and at another moment I was making minute steering adjustments right to go left and left to go right. I was transitioning between Mode 1 and Mode 2 steering depending on my speed! It is only because I was riding for a long time around the transition speed that I recognised what was happening. After all, how often do you ride very slowly for miles in a straight line?

On the Honda Goldwing this transition took place at about 25 kph, a speed I suspect is similar for other motorcycles although I think the rotational mass of the front wheel will affect this. What I think is happening is that at this transition speed the front wheel is turning fast enough to generate enough gyroscopic precession force to move the centre of gravity of the motorcycle when the front wheel is turned slightly. Up to that point the minute movement of the front wheel did not generate enough force at the road surface to move the centre of gravity of the motorcycle so that the motorcycle simply followed the front wheel. Left to go left, right to go right.

In May and June 2013 I rode a Honda ST1300 for 8,500 miles through the USA and in consequence I now give even more credit to Gyroscopic Precession as a contributor to Mode 2 and Mode 3 steering. Honda ST1300's and I have never really connected on an emotional level and this bike, borrowed from an American friend, did not change this opinion. After about 3000 miles the front tyre needed replacing and once this was done the Steering and handling of the bike improved enormously. I can only attribute this to the increased Gyroscopic Precession force available from the heavier tyre. This tells me that the front wheel should be heavier when it leaves the factory.

*Andy's enthralling paper, when in part he examines 'Power Thrust Vectors', will be continued in the next edition of OVR*



# Event Calendar

If you are planning any rides or are aware of events that readers may be interested in, you may invite others to participate via the "OVR Event Calendar" column. Just drop the editor a line at [OzVinReview@Gmail.com](mailto:OzVinReview@Gmail.com).

<b>2016</b>	
August 18-21	North American Vincent Rally 2016 – in Missoula, Montana. Contact Josh Bogage for more information, email <a href="mailto:Joshuabogage@gmail.com">Joshuabogage@gmail.com</a> .
October 15-16	Girder Fork Rally, Cooma, NSW - email <a href="mailto:owenpamjohnson@gmail.com">owenpamjohnson@gmail.com</a> for more info.
October 15-17	VOC Australian National Rally, Parkes, NSW. contact <a href="mailto:alynvincent@mac.com">alynvincent@mac.com</a> for more information
<b>2017</b>	
March 19-30	Tassie Tour 2017 (Australia), open to pre 1970 British bikes – for more info contact <a href="mailto:tassietour2017@hotmail.com">tassietour2017@hotmail.com</a> . This fantastic 10 day tour is limited to just 100 bikes so if you are interested, act now.

## Workshop Wisdom



### Carb sizes and ports, and other playful things.

The late "Big" Sid Biberman installed 32mm Mk1 concentrics on many of his customers Vincents to their full satisfaction, this with original port diameters. These were also fitted to his own Vincents all of which ran ported heads. As for the step at the inlet flange this creates with the larger bore carb where the manifold creates same, Sid maintained that this only acts to boost torque; remember that BSA Gold Stars came with larger racing carbs than the port diameter resulting in a 33 thou step just beyond the manifold and this proved quicker over tricky courses. Conversations Sid had with Dick Mann confirmed his findings on this; only on very long straights will removing this step pull a few more revs. While on tracks where there are lots of twists and bends calling for hard pulls up through the gears, that step wins races.



All of this concerns being at or near full throttle and pulling hard right up the range, not easy cruising at 70 mph or so as this needing barely any throttle on Vincents. Little more than a quarter throttle gets that done, maybe less, barely onto the needle in fact.

# HOW IT ALL BEGAN

*The history of the First "Petrol Cycle" and of Edward Butler, its British inventor: as told in Motor Cycling, 1951*

In 1884, Edward Butler, a London engineer, took out a patent for the "Mechanical propulsion of cycles." He had started on the design of his machine the previous year, and made his application on October 14. The patent granted to him was numbered 143,541, and for the next five years or so he devoted himself to the development of the project. Although the machine ran, it was impossible to exploit it commercially owing to the legal restrictions that were only removed by the famous Act of 1896 that opened the roads of Britain to the motor.

It is time to re-tell the story of Butler, which is probably unknown to many of the present generation of riders. If, as has been claimed, he was the first man in the world to build a motorcycle—and accordingly its original inventor and the virtual, if premature, founder of the industry—then his achievement calls for special mention at this time of the 1951 Earls Court Show. The claim is further due for re-examination. It was put forward by the late Eric W. Walford in his "Early Days in the British Motor Cycle Industry," published in 1931 under the auspices of the Manufacturers' Union. It was not challenged at the time, and in 1934 there was some celebration of the 50th anniversary of the invention. More recently, however, Walford's judgment of the matter has been called into question, no doubt for the reason that students of history have become more critical as well as more numerous.

In the early 1880's, the internal-combustion engine was engaging the attention of progressive engineers, who regarded it very much as a coming thing. In the previous decade, the ingenious Dr. Otto had convincingly demonstrated the possibilities of the four-stroke cycle of operation, that had been suggested by the Frenchman. Beau de Rochas, in the 'sixties. It was under an agreement with Otto, by the way, that Crossley Bros. started what became their vast gas-engine business near Manchester. Among Otto's associates was Gottlieb Daimler, whose mind was already turning to the application of the new prime mover to road vehicles. Also among the progressives, young Edward Butler saw that it could be used for propelling cycles. That gives the background of the matter, and the explanation of how it came about.

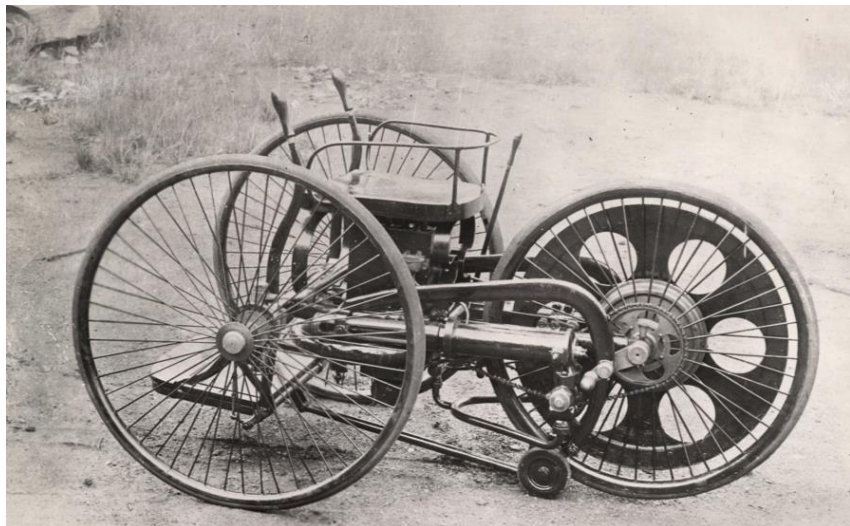
Readers will already have taken a glance at the pictures of Butler's machine. Some may ask whether it can, properly be classified as a motorcycle. That question, not perhaps unreasonable, must be answered at once. Beyond any doubt, the contrivance was a motorcycle according to the



*This 1889 photograph of Edward Butler driving his "Petrol - Cycle" shows the stub-axle steering layout operated by long levers.*

standards of its time. At that date, be it remembered, the safety bicycle had not yet appeared on the market. The ordinary, or "penny-farthing," bicycle was still supreme. As its use was somewhat hazardous, owing to the rider being perched above the high front wheel, tricycles were very popular. They were less liable to accidents, and if one should happen there was not so far to fall. A cyclist of that date could be a user of two wheels or three, and no distinction was made. In fact, the C.T.C, was originally the Bicycle Touring Club, although membership was open to tricyclists, and one finds the same laxity in the literature of the period. It was natural, and for obvious reasons, that when Butler decided to motorize the cycle he should select the three-wheeled form.

That even to-day the Butler machine would be legally classed as a motorcycle is an unimportant



point. But that he should have named it the "Petrol-Cycle," as he did is interesting. That great pioneer of the motor industry, the late F. R. Simms, is often quoted as the creator of the word "petrol." Certainly he himself was firm in that belief. Additionally, in my younger days, one was taught that the term was a trade name, and the property of Carless, Capel and Leonard, Ltd., of Hackney Wick. They were the only people to use it, and other firms were careful to

advertise their fuel as "motor spirit." However, Butler had thought of the word many years previously.

Before going further, it has to be considered what standards should be applied when attempting to decide which inventor was first in his particular field. The taking out of a patent hardly constitutes a valid claim ; still less does the production of notes, however well their dates may be authenticated. Ideally, there should be something more solid. At least the device must be shown to have been practicable and to have worked; also to be taken into account is its commercial success, and its influence on future developments. The real intention of the inventor is also of importance. But while those are useful pointers, I feel that no positive rules can really be laid down, as may be seen from certain cases that I will now quote.

Some are easy, like that of the farm tractor. It can be shown that Dan Albone, of Biggleswade, was first in the field by a matter of some years. He further built up a substantial business in the manufacture of the Ivel tractor. There is no question about the nature of his achievement; incidentally he was also the builder of the Ivel motorcycle. The case of Karl Benz, the inventor of the automobile, is on an equally sure footing.

But then there was Kirkpatrick MacMillan who, about 1840, produced the first bicycle with its rear wheel driven by pedals through an arrangement of cranks and swinging levers. For that achievement his name is very properly honoured, and his smithy at Courthill, near Dumfries, has become a shrine of the cycling world. But he held no patent, to the best of my belief, and there was no commercial exploitation.

As another extreme case take that of aviation. The brothers Wright were, for all practical purposes, the creators of the aeroplane. But long before their day; say by 1825, the theory of flight had been worked out by a Yorkshire squire, Sir George Cayley. He left full records of his work, which he confined to paper for the reason that he saw that it was useless to experiment with a flying machine in the absence of a suitable engine. Here there was not even the

production of a prototype, but Cayley has nevertheless been called the "father of aeronautics," and his memory is rightly honoured. Again, each of such cases must be judged on its individual merits and according to the circumstances.

Resuming the story, Edward Butler exhibited coloured sectional drawings of his machine at the Stanley Cycle Show of 1884, and at a display devoted to new inventions in the following year. In 1887, with the aid of a City of London solicitor, Mr. Theodore A. Allingham, a syndicate was formed to advance the project. A machine was built and tests began.

The original Butler Petrol-Cycle had a twin-cylinder two-stroke motor, and what the inventor himself described as a "hubble-bubble" carburettor. This was not a jet instrument nor of the ordinary surface type. Ignition was by magneto, which was later discarded as absorbing too much power to drive. Another very advanced feature, that also had to be abandoned, was the provision of a starter operated by compressed air. Butler recorded that the engine gave five-eighths h.p. on the brake at 80 r.p.m., its range being between 70 and 100 r.p.m., giving the machine a road speed of 8-12 m.p.h. As will be seen, the drive was through connecting rods, which were later used also by Hildebrand and Wolfmiiller in Germany and Holden in Britain.

No clutch was fitted. Before starting the engine, the rear wheel was raised from the ground by depressing the two small wheels on either side of it, which acted as a jack. They were operated by a pedal, and were raised again when the motor was running, whereupon the tyre made contact with the road and the machine moved off. The lever system of steering was common practice on tricycles of that date, and the weight of the machine was 400 lb., which was later reduced.

In 1889, when Butler took out a further patent, No. 15,598, an improved model was produced, with a four-stroke engine that ran at 400-600 r.p.m. It had rotary valves, and the system was subsequently applied by Butler to an engine that he fitted to a British-made version of the Bolide tricycle. An epicyclic reduction gear was added, specially made by a Clerkenwell clock-maker, and a foot-operated starter fitted. This, Butler recorded, enabled "almost any rider" to bring the motor to life promptly and without any difficulty. The inference is that the machine must have been tried by a number of different people.

At about that time, however, the syndicate made the unhappy discovery that the law as it then stood made the use of motor vehicles hardly practicable upon public highways in Britain. It may seem singular that they had previously been unaware of this, but just the same mistake was made by J. K. Starley, head of the Rover concern, almost simultaneously. Having produced an electrically propelled three-wheeler, he became aware of the position, and took it over to France to test. The design was never marketed.

One account says that Butler was warned off the roads by the authorities. That is very possible, and it is also not at all unlikely that previously he had been breaking regulations over a considerable period. He was carrying out his experiments at Erith, Kent, which would have been far more rural than it is to-day, and we know that even now, in country districts, such things are occasionally done without early detection.

On the rear mudguard of the later Butler model, which was of very modern design and reminiscent of present-day scooter practice, there appeared the name of "F. B. Shuttleworth, Erith." This is clearly shown in a contemporary photograph. It may be supposed that Shuttleworth was a local engineer who was commissioned to build the machine. Also engaged on its development was C T Crowden, later to become works manager of the Great Horseless Carriage Co., one of the creations of that fantastic financier of the 'nineties, Harry J. Lawson.

The syndicate was alarmed, and not unduly. Its resources were dwindling, and the chances of obtaining further support were clearly remote. Activities ceased in 1891, but five years later the

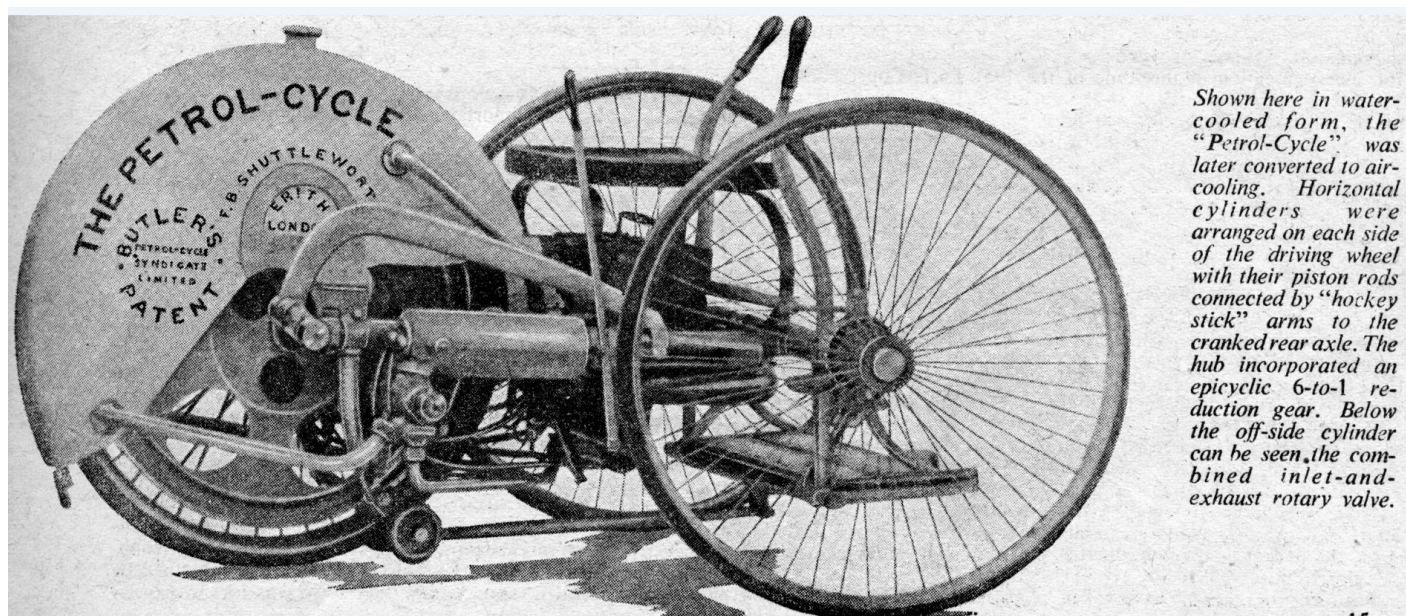
passing of the Emancipation Act provided a spark of hope. In fact, the design was sold to the British Motor Syndicate, Ltd., another Lawson venture, which was then concerned—not to put too fine a point upon it—in efforts to monopolize the newly-born motor industry of Britain. It acquired the rights on over 60 patents of which Butler's was one. Among the others were those of Daimler and De Dion Bouton But the Butler purchase was apparently regarded as of no real importance. Nothing was done in the way of further development, and before very long the prototype machine had, been sold for scrap.

In England, Butler had no competitor but we must see what had been happening abroad. Experiments with steam propulsion can be neglected for our present purpose. As far back as 1867, Michaux, a Frenchman, had built a steam bicycle, which was of the boneshaker type. Somebody even applied the same idea to a penny-farthing; it was tried with rather more success on at least one tricycle. But the first Continental motorcycle was Gottlieb Daimler's. He completed his machine in 1885.

Mr. St. John C. Nixon, the leading authority on the work of Daimler, has written that it is arguable whether this contrivance was ever ridden on public highways. The point may not be of supreme importance, along with the fact that Daimler did take out a patent for his design. What is, however, significant is that he made no attempt to develop it further His next vehicle was a four-wheeler, and that had been his original objective.

Benz started to build a three-wheeler in 1884 and had it running the following year. While calling for mention, I feel that this production has really little bearing on the subject under discussion. Referring once again to Mr. St. John Nixon. his "Invention of the Automobile" makes it quite clear that Benz was aiming, like Daimler, at making a motorcar, and certainly not any kind of motorcycle.. He adopted a three-wheel layout on his original prototype as a matter of convenience only and did not perpetuate it. Just the same thing was done by other pioneers. Butler's intention, however, was different, as we have already seen. His concern was with the cycle, and not the car. In that, he was unique in his day.

Nobody else was prosecuting the same aim. He produced a practical design, which included features that were notable, if ahead of their time. His machine ran, and could readily have been improved if its development had continued. That it was suspended casts no reflection on the inventor, except in so far as he may have failed to inspire his financial backers with his own faith and vision. He was defeated not by lack of ability, but through the archaic state of the law of the land. That I submit as a considered judgment on Edward Butler and his work. The verdict should go in its favour.



*Shown here in water-cooled form, the "Petrol-Cycle" was later converted to air-cooling. Horizontal cylinders were arranged on each side of the driving wheel with their piston rods connected by "hockey stick" arms to the cranked rear axle. The hub incorporated an epicyclic 6-to-1 reduction gear. Below the off-side cylinder can be seen the combined inlet-and-exhaust rotary valve.*

# Two Australians At Large

**The continuing travel diary of Joy & Bob Allen and their Shadow outfit.**

*Preamble: The Allens decided to take part in the 2015 VOC International Rally in Italy. In preparation Bob built up the Shadow outfit in his workshop in Australia then shipped it off to the UK. Bob continues the story [editor]*



On route from Corsica to France, the noise in the hallway outside our cabin awoke us at around 6am as we rolled out of our bunks and followed our fellow passengers up to the restaurant for breakfast, a massive affair with bacon, eggs, beans and toast and good strong English breakfast tea, not what we expected at all on a Corsican ferry.

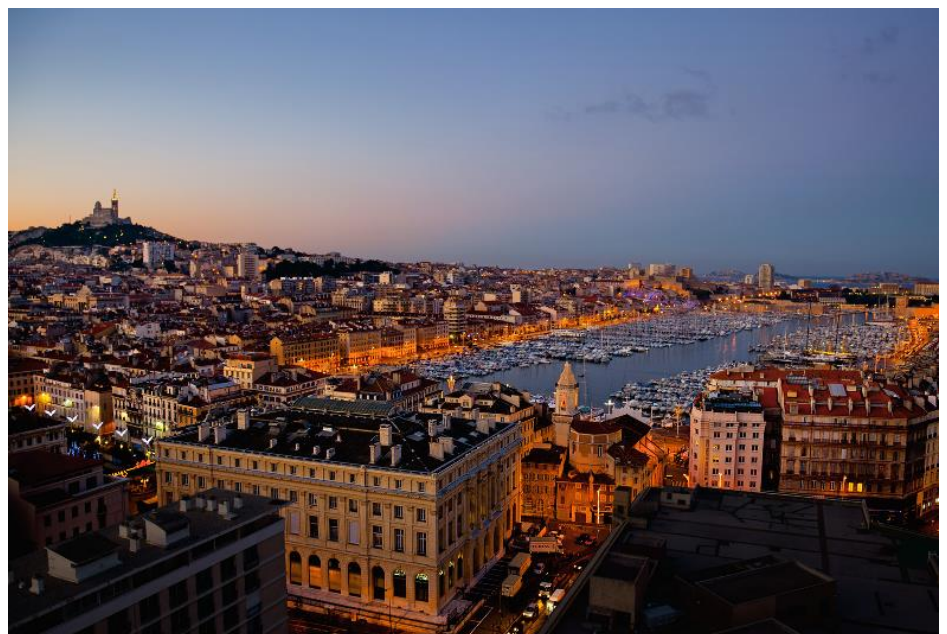
We took seats in the dining area and looked out into a dark cloudy dawn with a squall approaching from the sea behind us and before we finished breakfast the rain had started. We walked out onto the deck to see the Port of Marseille in the distance, the wind was like ice and we soon returned to our cabin to dress appropriately.

The long thermal underwear was dug out of our luggage and we were soon in the hull in full leathers ready to disembark, the shady lady fired first kick as usual to a small group of casual observers and settled straight away into her lumpy idle.

The offloading was fast and efficient and we emerged from the bowels of the ferry onto the ferry forecourt and headed along the docks and into the city in 15 minutes we were as cold as a frog's tit and pulled into the City Centre when the shops opened I bought a scarf and woolen gloves to wear inside my wet leather gloves; ah much better!

Joy was in the Orange store trying to get her new French SIM data card so we could find our way and once started we found the quickest route to the countryside

The rain eased off and the sun was out by the time we arrived at Aix En Provence, I pulled over and removed the plastic bags off my gloves (no wet weather gear at all) to let them dry out when I saw this very large poster advertising the imminent arrival of a travelling circus, what a great souvenir so in no time at all I was folding it into my top box for immigration to OZ



France is full of beautiful villages that are just like being back in the 17th century, no new shops, usually a Town square, Cathedral, Market, Butcher, Baker and candlestick maker with fabulous gardens and quaint restaurants, little traffic and a very relaxed atmosphere. There is a French map made by Michelin called Les Plus Beau Villages De France, this map shows where the most beautiful villages in France total 150 I'm sure there's more but these are not easy to find and this map is the touring riders best friend.



*Les Beaux De Provence*

Following this map we left Aix En Provence travelled to the beautiful villages of Salon-De Provence then to Les Beaux De Provence and to St Remy De Provence, stopping only for coffee and a baguette. We are soon pushing onto Avignon and arrive mid afternoon at this massive walled city. The sun is shining brightly as we ride along the river approaching the city, when we see a bike and sidecar parked off the road near a lonely rider sitting on the river bank, looking at the scenery, we pulled in to see if he is OK; Joy chats to him in French he is just enjoying the day on his new Ural with sidecar and after the introductions are over we sit beside him and admire the view.

We tell him that we are staying in Avignon tonight but he suggests that Orange is where we should stay and it's only an hour away. We take a photo or two of each other's bikes and are soon on our way to our new destination.

We found an excellent old Hotel in the Orange Town square with private garage parking at the rear for the Lady and while I did my checks on the chain and brakes and checked for loose nuts, Joy took the luggage up and settled in. Orange has some lovely restaurants and having dressed in our finest livery we soon ensconced ourselves in one recommended by the Hotel owner and it was a cracker. We awoke the next morning to find the market in full swing by 9am with roasted pork trotters, roast duck, chickens, beef and roast potatoes and Veggies being served amongst the most amazing mix of stalls



selling anything and everything Joy found a table runner for home just what she needed!

Music & people singing and dancing and the bars are open ready to serve the thirsty.

The weather is holding up and the sun is bright but summer is definitely over in France the Autumn leaves have turned beautiful colors and some of the leaves are falling as fast as Mercury with a low today of 7 degree and a high of 12°. Joy had purchased a mohair rug to wrap her legs in the sidecar and a furry scarf that covered nearly her whole helmet looked like the local squirrels wrapped around her head heading towards our target today St Etienne in the Loire Valley.

The ride is textbook; the countryside flying past the roar of the Vincent in our ears, Montelimar then Valence flew past as we approached the mountains of the Loir. The closer we got the darker the sky became and as we began our ascent into the misty mountain the rain started falling, half way up the mountain we rode into wet fluffy clouds that soaked you to the skin. The visibility was only 2 car lengths and we soon caught up to the back end of a convoy of cars sneaking along at 15 klm an hour. It took 20 minutes to climb the last 10 kilometers into the pilgrimage city of St Etienne, where we arrived soaking wet and freezing cold we found our hotel "Le Cheval Noir" The Black horse.



The manager welcomed us warmly and opened the garage for us to put the shady lady away from prying eyes for the night. We were soon in the shower to warm up and with wet leather jackets hanging everywhere we cranked up the heater.

There is a 3 star Michelin restaurant 2 doors away which we hoped to eat at but was booked out so we asked the Managers recommended restaurant, we had a magnificent repast with excellent wines from Bordeaux. We walked back to our hotel and past the Michelin star restaurant and it was only half full, silly buggers lost our money that night must not have liked the look of us!

The next day was overcast on top of the mountain, our gear was dry and warm, so we headed off early and had an uneventful ride along the N7 through Roanne, Lapalisse, Moulins and



Arrived at Nevers where we had booked to stay at Chateau Du Four De Vaux "the fire of worth" for our 23rd wedding Anniversary.

A magnificent Chateau on the outskirts of Nevers, run by the family who had moved from Paris. They set up the spa, wine, cheese and meat platter for us no need to go into town for dinner that night. A wonderful breakfast the next morning, to complete the stay.



I removed the covers and after a quick check over the outfit, loaded the luggage and we are heading along tiny country roads back to the N7 towards Paris.

We do our best to avoid main highways usually, our entrance to the N7 was closed due to road works so after riding aimlessly for 15 minutes as our Gps demanded we go back to the entrance that was closed we saw a fellow motorcyclist on a Yamaha about to depart somewhere with his baguette on board, we stopped and asked for directions to the N7 explaining the entrance was closed he spoke no English, Joy managed to explain our dilemma he motioned for us to follow him I could not believe the route he was taking us no way could we have found our way he delivered us to the N7 waved us onto it and in a flash was gone heading back to the village with his baguette and probably wine and fromage on board.



We had decided to take the most direct route towards Calais which took us through the heart of Paris, what a nightmare, a few wrong turns had us having to reset the navigation several times and the traffic made inner City Melbourne look like an empty car park, and unlike most French Parisians drive at 100 miles per hour full time. Still people taking photos, waving thumbs up all we wanted to do was get out of this traffic: very stressful.

Two hours of our lives we will never see again but we survived and ended up emerging on the M16 riding hard to make up time to reach the Town of Beauvais before darkness descended.

Riding through twilight down the street looking for our accommodation we see a pub with a Harley sportster on the footpath with a German army helmet on its seat a quick check to find this is our new home for the night. The Owner comes running out with a few mates to inspect the Black Shadow and Stieb sidecar on his footpath and upon learning we are his new guests, has the Harley rider move his bike so we can park in his private garage after a few drinks at the bar we set off to our room and again have an amazing dinner and an early night.



After breakfast we thanked the staff and now we're heading towards Amiens post haste.

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With This edition the cupboard is bare!!!

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