

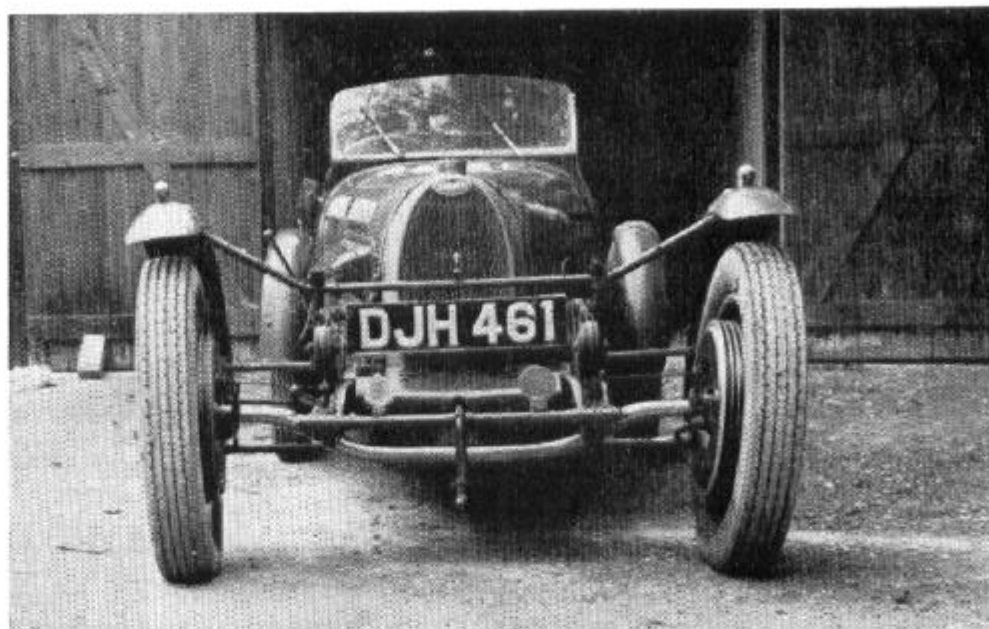
# AT LAST, A BUGATTI

By J. WILSON, *who found a "Bottled" Type 37A*

*If anyone is worried about the term "Bottled" when applied to the Bugatti, in defence of my sober, if not industrious character, let me reveal that this expression is lifted from an article in an American motor magazine. The writer states that the frame rails of the Type 43 are straight, and not bottled like those of the Grand Prix models.—*

THE AUTHOR

HEAD ON VIEW of the author's beautifully restored Grand Prix Bugatti.



IT has been said that ownership of old Bugatti cars indicates a form of insanity in those who indulge that fancy. A case of Bugmania myself, I do not want to be cured. I do not mind being thought mad. If I did, I should go around asking owners of Tompion clocks, Breguet watches, and Gainsborough pictures if they had taken leave of their senses.

This enthusiasm for Bugatti cars is not the fatuous enthusiasm of the uninformed. A quarter-century of roadfaring with more than forty assorted motor vehicles should provide a basis for sound judgment. Exposed to the infection at the earliest age one could hold a licence, in 1925, it was not until 1938 that I finally succumbed to the germ. Deterred for years by lack of cash, and by the advice of elder members of the motoring fraternity, the recurrent hankering for a Bugatti had been ruthlessly repressed. One was told that the Molsheim Masterpiece ate, drank, and smoked to excess. (Plugs, petrol, and Castrol R). That maintenance was so expensive as to render one's own intake of food, beer, and tobacco infinitesimal, and one's Bank Manager hairless. That one could not drive the car

across London without stalling at every traffic-light, finally ending the run booked by at least six bobbies, filthy dirty, with large areas of knuckle-skin adhering to the front dumbiron, and the palms of one's hands like those of a galley slave still under training. Not to mention falling flat on one's face at least once, oil from the cockpit floor having made the feet so slippery, that on leaving the car, to change plugs, a fall was inevitable.

All this, and more, might have been my fate if I had bought a certain Brescia model. Lured into temptation by a phrase in the advertisement: "Thoroughly overhauled," I rushed off from the office one Saturday expecting to see a long queue for this bargain. "Only 16½ quid, old boy." The engine was so stiff to turn by the handle, that an effort to assess the compression in the cylinders was abandoned. There probably wasn't any. The major part of the overhaul had, no doubt, consisted of the time-honoured practice of nipping up the big-ends. There was no tractor available, so I went home, bus fares unrecompensed by the Bugatti noises which might have made the visit worthwhile. I know now, after some experience of the

*marque*, that even a well-tuned Brescia can be driven across town without attracting undue attention.

Some time after this fiasco, a trip in a friend's Type 37 added a distinct fillip to my symptoms. Flexibility on the 3.85 to 1 top gear was astonishing. One is apt to forget that the inadequate-looking flywheel is full of clutch plates, and the beautiful crankshaft is a row of little flywheels as well. In 1938, as usual, funds were the trouble. At that time, too, it looked as if the re-armament programme would call for increased taxation. As we know, the fifteen shillings per horsepower tax was raised to twenty-five bob, making my trusty but thirsty Speed Twenty Alvis an expensive inmate of the stable. Dealers were offering "a pound a horsepower" for the Alvis. A financially acceptable swop looked both necessary and unlikely.

One day, a friend reported the whereabouts of what he described as a "weird" Bugatti. Perhaps, if the Bugatti was, in fact, weird, it would escape the attention of the real fanciers and therefore go cheap. As my friend knew nothing of Bugattis and myself little more, a trip to view the car was the order of the day. On our arrival, the car was not visible among the pavement-dealer's stock. "I've missed this one," I thought. The pavement was littered with Hornets, and other insecticide-worthy rice - pudding - skin - pullers. Parking the Alvis in a side street, I returned to have a look round. In a small, dim room behind the disgusting array, lurked the weird Bugatti. It was immediately obvious why the car had been so described. There were two petrol tanks, whose filler caps were close together. But instead of matching, these filler caps were completely at odds with one another. One was the proper aluminium-eared one, the other the plain knurled radiator cap. The other petrol cap had been put askew on the radiator, completely marring the usual classic effect. The question: "Why switch the caps?" brought the answer: "Oh, that's to provide quick-action filling of the radiator." One was left to assume that the machine used more water than fuel, when in a hurry. The car looked as if it had done very well at a party, and then allowed hooligans to take advantage of it in the street on the way home. The silly name on the bonnet did nothing to mitigate its dishevelled appearance. The Bugatti was in a travesty of what is popularly called "full racing trim," with no mudguards

or lamps. There were sundry "power bulges" on the bonnet, due to the presence beneath it of the largest carburettor and super-charger I have ever seen on a 1½-litre Bugatti.

The appearance of an individual, arm in sling, wrist strapped up, made me pause. The association of ideas, I suppose. Pointing to the Bugatti, I asked: "For sale?" "Yes," was the reply. And the price was, indeed, reasonable. As I looked round the car, he explained how, having tested (his word) the car on the Folkestone road every day for a week, he had decided to enter for a race. When trying to start the car for this, it had taken a bite at his wrist, or something. The race had been run without his presence on the line, for several weeks he had been unable to use his arm, so, fed up, he had decided to sell. Is this the first recorded case of a car getting rid of an unsatisfactory owner?

The Bugatti seemed to have escaped ruin. A run was arranged for the following Saturday. If it ran all right, we agreed to do a level swop with the Alvis. For an hour, the long-suffering car refused to start. It was one of those drizzly days, inauspicious for buying a car. Dirty rags were stuffed into the protesting maw of the Solex. The Kigass was pumped until its little tank ran dry. The handle was wound interminably—not a pop. The car was pushed up the road, then down again. Not a spit. Suddenly, the engine started, with such a shattering row I thought it would surely fly to bits, and the deal be off. No warming up, get going before the motor stops! The dogs were still barking, they tell me, ten minutes after we had set off, the "boy" driving, the owner still nursing his injury among his dissipated stock. The gears were terribly noisy, and jumped out frequently. Gear crashing, spitting, banging and popping ("Blown, old boy"), we must have worked up to a speed of at least 40 m.p.h. when I yelled: "Let's go back, I've had enough." The silence when the engine stopped was uncanny. Over the hapless wreck, now quietly smoking, with pools of water, petrol, and oil forming on the road underneath, the deal was completed. The highly illegal nature of our test run led me to ask if there was any road equipment with the car. There was a pair of Solexes, for unblown running, a set of cycle-type wings, and a pair of Marchal headlamps. There was also a Ford dynamo which later got lost. The best thing about the car was the smell of

Castrol R. In exchange for a spot-on Speed Twenty, I had acquired—what?

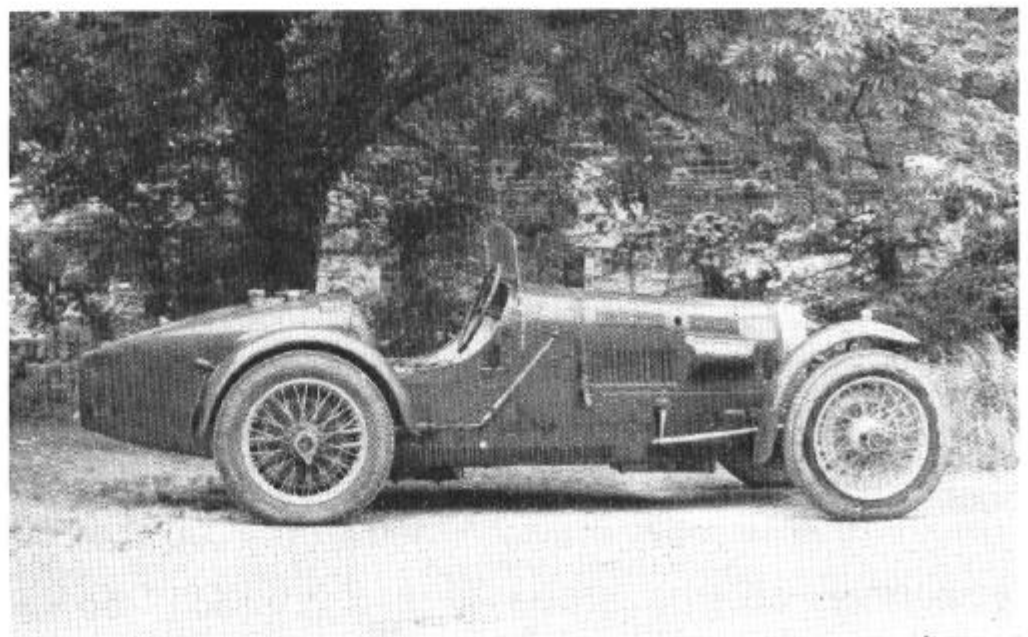
The Bugatti's last indignity was to be towed to my home behind a vehicle currently called a Passion Wagon, or was it a Sissy Six? The fact that my first trip in my first Bugatti was made in such distressing conditions could not entirely dispel the thrill of it. I could hardly wait for the morrow, when my brother and I decided to see if we could start the car. Perhaps this is a good point at which to describe what we were about to try our skill upon. The car was basically Type 37, with many modifications, some proper Bugatti ones, others more in the nature of vandalism. It had the large brakes, with alloy fins, which we were surprised to find screwed on to a thread cut in the periphery of the drums. Hartford shock-absorbers supplemented the Bugatti ones, and the front springs were corded and taped. There were two petrol tanks, requiring a truly formidable array of taps and pipes. The engine was fitted with an 8-plug block, sparked by twin Scintilla Vertex magnetos, mounted horizontally at right angles to the line of the camshaft, on a neat square aluminium box containing a set of bevel gears, driving one magneto on the near-side, and the other on the offside of the box, which forms a harmonious extension to the rear of the cam-box. Advance and retard was effected by a large tramdriver's knob in the centre of the facia; this knob invariably evokes the question, "What's that for?" It travels horizontally over a toothed quadrant, unlike the vertically-working lever which it replaced.

The supercharger, Roots type, was mounted vertically in front of the engine, the dynamo housing being replaced by a massive casting, containing bevels driving the oil pump below, and the blower above. The Solex carburettor was bolted to the near side of the blower, assuming a position low down just behind the radiator, and covered by an ugly bulge in the bonnet. Mixture is delivered to the manifold by a large-diameter copper pipe, requiring another large, but less unpleasant looking, bulge on the off-side of the bonnet. The manifold is similar to the standard one in appearance, but has no water jacket, and incorporates the blow-off valve. This arrangement is doubtless necessary to accommodate a larger compressor than that usually fitted to the Type 37a.

The standard bunch-of-bananas feeding a silencer under the car had been replaced with a very neat four-branch "Brooklands" lay out. The silencer, being bolted to the side of the body, keeps the passenger warm, and the tail pipe has caused many complaints, as one is apt to use it as a rest for the hand when getting out. After all, it doesn't LOOK hot. When bought, the Bugatti had an Ashby wheel fitted, which excellent component has since made way for the correct Bugatti one.

To return to the business of starting the car. I have never really liked the Kigass. Seems too easy to get too much liquid fuel into the induction tract. So we did not use it. My brother had been told of the previous rag-stuffing display. As there were two petrol tanks, there were even more taps to twiddle

OFF-SIDE VIEW of the Type 37a Bugatti, showing external hand brake lever and one of the non-standard "power-bulges" on the bonnet.



than usual, before petrol could be persuaded to appear at the carburettor. This achieved, we contented ourselves with flooding the carburettor, but not too much, as evidence of previous fires was apparent on the bonnet. We gave the motor a few turns with the mags switched off, to charge the blower and pipes with mixture. Expecting an endurance test, he held the throttle rod while I took the first turn at the handle. The engine started at once, and ran quite quietly at about 800 r.p.m. My brother made no comment, but the proud owner felt rather silly. The temptation to take the unlicensed car on the road was resisted.

It was decided to check over everything, as the Bugatti had certainly lacked urge on the infamous demonstration run. When we came to try undoing the nuts securing the cam cover, I realised that the first thing to do when you buy a Bugatti, is to buy a set of metric spanners. A sacrilegious shifter was used, and the valve gear examined. A piece of rod was bent into a U for undoing the brass plugs whose removal permits the entry of feeler gauges to check the rocker clearances. Valves were opening and shutting all over the shop. Clearance varied from 8 to 80 thou. It was decided to proceed no further. Some good metric spanners were bought, and the engine completely dismantled.

For the next few weeks pieces of Bugatti appeared in all sorts of odd places in the family residence, to the annoyance of those members having no artistic appreciation. Fortunately for the bank balance, the engine had escaped serious injury, one or two lines on the skirts of the Martlet pistons being the only evidence of inconsiderate treatment. At some previous time the engine had been seriously blown up, but the necessary repairs to block and upper part of crankcase had been skilfully effected. I had expected much worse, and it was pleasant to find a full pressure crank. The only new parts needed were a few bolts in the chassis and two of the cast iron plates in the clutch. The most expensive repair was to the near side front engine bearer, which was welded. Although the crankshaft were not scored, and the white metal surfaces of the bearing looked sound, it was decided to remetal them all, to ensure a good oil pressure. This also meant renewing the bottom bevel thrust washer in the drive to the camshaft.

Many hours were spent polishing everything internal and external. We felt rewarded for

this, when a perfect stranger called one day, saying he had heard there was a Bugatti in the district. Before he left, he offered twice as much for the car, in bits, than I had been asked for it in (so-called) going order. I've never regretted declining his offer.

The most tedious part of the whole job of rebuilding, was getting rid of all traces of Castrol R, particularly from among the cooling tubes in the sump. The valve timing presented a problem, as the camshaft was not standard. A timing giving slightly more overlap than standard was decided on. About 20,000 miles running, mostly on Pool, with a plate under the block, seem to have proved the choice right, but it is unfortunate that we did not accurately measure the compression ratio when we had the chance. It is about 7 to 1, and benzole was really desirable with Pool. The car has not been run since the return of premium fuels. It should be mentioned that the car was assembled to run unblown, and with the twin Solex arrangement fuel consumption was over 30 m.p.g. whilst running in, increasing to about 28 when cruising at an average of 2,500 r.p.m. The engine is very easy on plugs, K.L.G. M60 inlet side, and Champion R7 exhaust side being usual. The engine tends to run too cool, so cardboard blankings are used behind the radiator, where they won't show, and can be varied in area according to the weather. Starting is absurdly easy, as one would expect, with the type of magneto fitted.

When the car was put on the road, it was April, 1939. It was soon obvious that the ghastly state of the gears would kill all the joy of motoring. But they were good enough for me to learn on. Our first run out with the car was rather harrowing. A friend had generously given a lot of his time cleaning and polishing parts for me. He was therefore accorded the privilege of accompanying me on this important occasion. We had gone a couple of miles or so, very fairy-footed, of course, when a dreadful screeching noise assailed our ears. It was just such a noise as I had heard when one of my motorcycles had seized a piston. The engine was immediately switched off, and the Bugatti brought to rest. It did not seem overheated, and turning the starting handle disclosed no undue stiffness. The stickiness of nine newly-metalled bearings might have masked a tight piston, but as these had already done some considerable running, it was thought unlikely. One theory was, that an auxiliary drive was

drying up. We decided to increase the oil feed to the magneto drive box, which was provided with an adjustable tap in the pipe leading to a jet which squirted oil on to the bevels. Engine re-started—no screech! Hooray that's cured it! We reinserted ourselves into the cockpit, but decided to make for home, just in case. Sure enough the horrid noise soon reappeared. So we stopped, got out once more, and pushed; the few people about smiled broadly at the two harassed looking rough types pushing their queer little car. You can imagine we were not pleased with the idea of removing the block, so when we got back to the garage, the plugs were whipped out, and graphite running-in compound injected into the cylinders. Everything we could think of was oiled. The engine was run up once more, and the screech was cured. That is, for a few months. Eventually the cause was found. It was trivial in the extreme. You've guessed? Yes, it was the little cam which operates the air-pump at the back of the cam box running dry. I can hear the experienced fellows saying, "Why didn't the silly clot use more systematic methods of tracing the trouble?" Well, we all learn by experience.

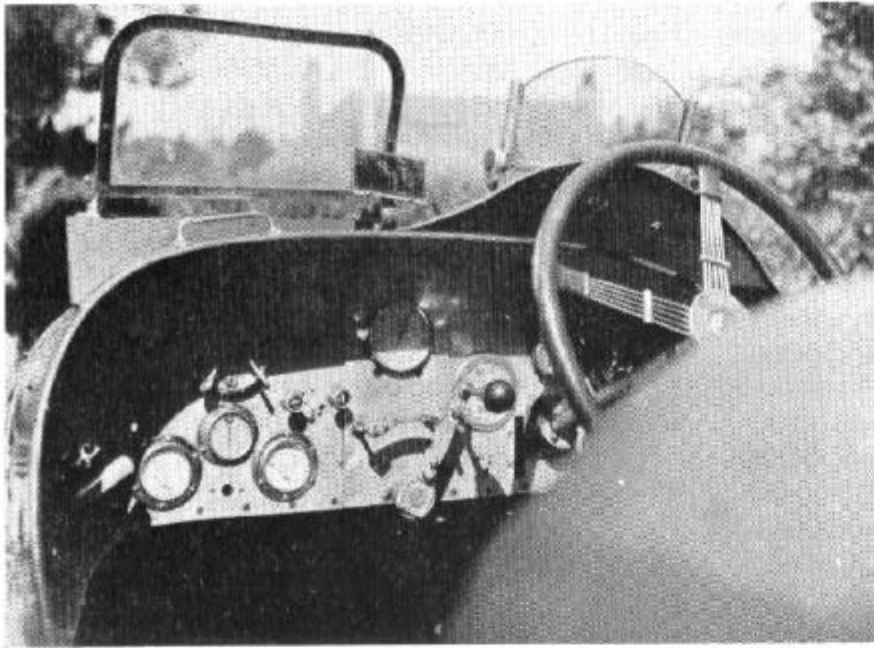
Soon, the question of replacing the gears, which were not improved by my early efforts with them, became urgent. A call was made at 1-3 Brixton Road. I enjoyed the sight of some interesting Bugattis there much more than the news that a new pair of third speed gears alone would cost £12. So I went away hoping that some used ones could be found. And so they were. One day, scanning the local rag, an advertisement of singular aspect caught my eye. "Bugatte", it said, "8 cyl, runner, £12". Off like a shot, I got to the place mentioned, and there stood, in the open, not the expected Type 30, or 38, but a 35a, which is the unblown 2-litre *G. P. Modifié* model having a pukka G.P. gearbox. Sagittarius quite obviously in the ascendant. The owner was apologetic. The car had been rolled over, had been on fire and had been very roughly repaired. "I know it's pretty shaggy," he said, "but it's just had a new third gear fitted." Sagittarius nearing the zenith! A 10mm. spanner was out of my pocket, and the lid off that gearbox very quickly. I saw that I had not been born in December for nothing. I gave him the money. The rolling smoke clouds were a serious hindrance to other road users on the way home. Never mind the worn-out pistons, the oiled-up plugs or the wobbling distributor

which threatened to fall off at any moment. I parked my new third gear in the shed to be dealt with later.

It was a tedious business removing the gears from both boxes and assembling the best ones into the box on the Type 37. Fortunately, the deficiencies in each cancelled out, so a good box was the result. To help anyone faced with a similar case, I think it would have saved time to have removed both boxes from the cars and done the work on the bench. Any Bugatti owner familiar with the peculiar arrangement of the splines will understand. A press is almost essential, if damage to the threads on the ends of the layshaft is to be avoided.

Now the Bugatti had to be put away, and my propensity for messing about with mechanical things had to be diverted into electronic channels until 1946, when I was demobbed. The family had moved twice during the war, and my release leave was spent collecting pieces of Bugatti from several different places, wherever a member of our family had room in the loft, or garden shed. The Type 37 got to know the smell of coal and onions very well. In response to Lord Beaverbrook's appeal for pots and pans, the body of the Type 35a was collected by the local council to be made into Spitfires. The frame was hung on the garage wall. Other parts were dispersed as already related. The front and rear axles, unfortunately, had to take their chance in the garden, which was untended for years. When I got to work again in 1946, they were nowhere to be seen. Have they been sent for scrap?" I asked, "with the other old iron?" "Oh, no, they must be in the garden somewhere". I thought the quickest way to find the bits would be to set fire to the jungle, but consideration for the neighbours decided me in favour of further orthodox exploration. At last, hiding like Brer Rabbit in a bramble-patch, I found a brown rusty hub. Half an hour's work with an offensive weapon, and I had uncovered the lot.

Well, I thought, the brambles had probably saved my precious spares from a worse fate, say discovery and destruction by German bombers, or being carted off in triumph by Boy Scouts out on a Salvage Drive. As it happened, everything has turned out quite well, as the parts have cleaned up very satisfactorily. The Type 35a is being rebuilt, but that is another story.



COCKPIT VIEW of J. Taylor's Bugatti. Note the "tram-driver's handle" for advancing and retarding the ignition and the very adequate extra windscreen for the girl-friend. The Ashby steering wheel was later replaced by the correct Bugatti wheel

Since work was restarted on both these Bugattis in 1946, there have been many setbacks. People are always saying "Why not sell those old wrecks, and buy one decent car?" Surely the answer is, that in the grip of this particular disease, the patient does not know the difference between a decent car and an old wreck. He does not admit that any Bugatti is a wreck. If it needs a bit of attention, he is happy to rectify that state of affairs.

The Type 37 has proved extremely reliable in use; the dire warnings of my mentors have not resulted in the disposal of the Bugatti in disgust. It is real fun to drive, and, rather surprisingly, the hard ride does not induce fatigue. It is very easy on plugs, and has never oiled one, even on a day's run of over 400 miles. To present a true picture, such troubles as there have been should be mentioned. After the usual running-in snags, like oil leaks, finding the right carburettor and ignition settings, tyre pressures and so on, no part of Bugatti manufacture has failed in normal use. One bad oil leak was traced to a blowhole in the cast body of the pressure release valve, a non-standard fitment. Another was caused by a crack in an oil pipe, near a union, but it was not in the actual part where the union had been brazed on, as one might expect. When the car was put into commission after the war, a good deal of scale from the petrol tank got through to the carburettors. One often got flooding from one carburettor whilst the other was starved. Filters cured this and after a time the amount of dirt coming through dwindled to negligible proportions.

One of the petrol tanks developed a leak, but as one could go 200 miles on the other, it was never dealt with. The sleeve adjuster on the hand-brake cable to the off-side rear brake broke at the lucknut. A queer grabbing effect of one rear brake when rounding bumpy corners was found to be due to a rivet head which had come adrift, luckily doing no damage. A shock-absorber mounting plate came loose on a fast run home from holiday in Scotland, but as it was not the standard Bugatti arrangement, but a modified mounting to take the Hartford damper, a wayside garage was able to replace one of the B.S.F. bolts which had dropped out, in a matter of minutes. In 15 years of motoring with this car, I have never carried a spare wheel, and have only had two punctures, one slow, so that I got home; the other involving climbing over a fence in Wales and using water in a pool in a field occupied by cows. A dirty business!

Not serious, but horribly inconvenient, was the breakage of the manual commencer as I was about to set out for home at 6 a.m. from Shropshire. I should have expected this, as the handle was badly bent when the car was bought, but we straightened it cold. It "Came 'orf in me 'and" where the hand grip curves into the shank. A push start was out of the question, unless the household was to be roused. A look round the barn which afforded the Bugatti protection of nights, produced some wire. A jury rig enabled a start to be obtained. If a cross-road-cluttering clot had not caused me to stall the engine, I should have

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been able to get home without trouble. As it was, there was no one about, I had left the wire in the barn, and I was stuck for about half an hour. There was no helpful gradient. My efforts to push and then jump in may have been stupid; they were certainly unsuccessful. At last a kindly countryman appeared and we got away.

Set against many miles of exhilarating motoring, these ills are not too hard to bear. But two serious misfortunes have befallen the car. The first was the fracturing of the welded engine bearer. The car was allowed to run over three large stones marking the road edge. My own fault for momentarily removing my eyes from the road ahead. A sound crankcase has been acquired. The second occurred on a night run to a V.S.C.C. club night. A hot smell seemed to merit attention. The drain tap fitted to the bottom of the water pump had unscrewed itself and fallen out, followed by all the coolant. A short length of a stick, cut from the hedge, was used as a plug, taped into place. There was a garage still open not far away, and the man on duty was kind enough to supply us with water, and to run us back to the car in his van. The car seemed to have survived this contretemps, but a month or so afterwards, the engine failing to start on all four, as was its wont, the plugs were removed for inspection. There was water on No. 2. It is clear that there is a crack in the block, so the Bugatti has had to be laid up until

time can be found to deal with it, and it will be a blow if the 8-plug block cannot be repaired.

I should not like to leave the subject of this type of Bugatti without passing on a few remarks about the snags, if such they are, which one may encounter if one is laid low with this "Bugattiphilia". I do not propose to go into a lot of details of what one should look for in buying one. But it may be worth repeating that those Type 37 cars with a full pressure crank are worth seeking out. Some folk seem not to know that this difference exists. I certainly did not when I bought one. I was lucky !

The clutch is probably the most troublesome, because the least understood, part of the car. Many Bugatti models have the same type of clutch as the Type 37. It does not work by centrifugal force. Believers in this fairy tale will never master its vagaries. The tension spring which draws it into engagement is not a material factor in its adjustment, as the grip is produced by an ingenious system of leverage. Provided the clutch is assembled from parts in good condition, and kept supplied with fluid (not too much, or your bills for shoes, socks, trousers, and girl friend's nylons will rise alarmingly) it is only necessary to adjust it properly, the simplest thing in the world to do. If drag is excessive, and some is inevitable, check that the gearbox is properly in line with the engine. At the risk of boring readers, it may be worth stressing that these cars won't go properly until well warmed up, and heavy feet at the beginning of a run may mean heavy bills at the premature end of it.