Jam on everything

Peter Watson casts a critical eye over AMC's famous suspension units

WAS there ever a suspension unit so famous? It seems that everyone has heard of the Jampot and most could tell you that a pair was fitted to the rear of AJS and Matchless machines 'some time in the 1950s'. There the interest of non-AMC enthusiasts tends to falter, which is a shame, because there's far more to the Jampot story than meets the eye in the shape of a decidedly rotund, coil-over-shock, hydraulically damped suspension leg.

For all its fame, the Jampot's life was a brief one. Having appeared on AMC's racers in 1950, it was announced as a fitment for spring-frame AJS and Matchless models — including the new 350 and 500cc scramblers — in the coming year. With a small number of modifications it was then employed for only six years in all, before being replaced by a Girling unit throughout the AMC range for 1957.

Very few, if any, motorcycle manufacturers produce their own rear suspension units today. It makes sound economic sense to buy them in from a whole range of specialist makers: Showa, Sebac, Paoli or Koni, to name but a few. In the immediate post-war era things were different. Velocette might have been experimenting with a pivoted fork and twin units at the rear since 1936, but if you planned to follow suit, there was a distinct lack of off-the-shelf designs.

Moreover, not everyone seemed to agree that 'swinging arm' — as it was to become known — was the way to go. Plunger designs, lacking hydraulic damping, were to enjoy brief popularity in the late 1940s and early fifties, not to mention such oddities as Ariel's link and plunger, Triumph's sprung hub and the torsion-bar rear suspension of the Douglas flat twin.

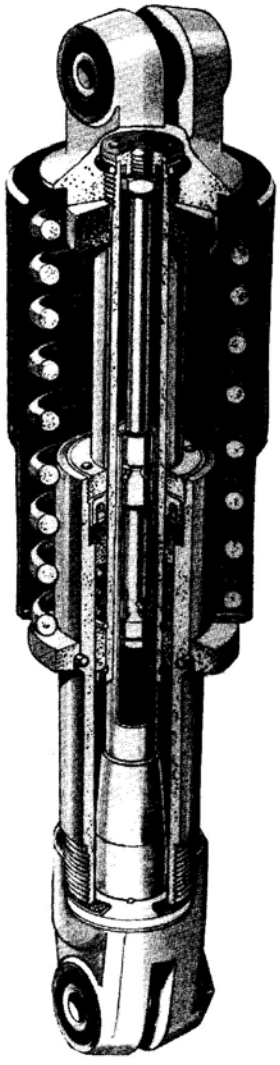
So it was hardly surprising that AMC should design and build its own suspension units for the first, 1949, spring-frame AJS and Matchless road machines. Royal Enfield had done precisely the same thing for their Bullet single and 500cc Twin of the same year. AMC models available with rear suspension were the well-known 350 and 500cc ohv singles and the new 500cc parallel twin.

These machines were fitted with vertically-mounted Teledraulic units. The name was derived from the hydraulically damped AMC telescopic front fork which had seen service use on the 350cc Matchless G3/L from 1941. It was also the name officially applied to the succeeding Jampot. But from the moment when a *Motor Cycle* journalist commented upon 'the almost jam-pot size of the upper halves' of the new Teledraulic units late in 1950, the factory's designation became something of merely academic interest.

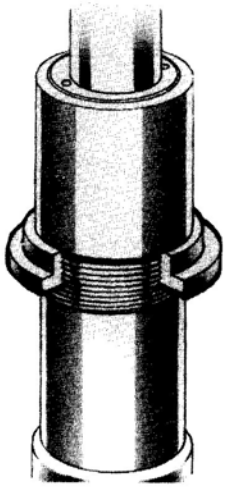
Thus, too, the 1949-50 Teledraulic units have become known as Candlesticks, for in contrast to the Jampot's bulk this was a slim, candlestick-like design. It shared a distinctive feature with the later Jampot, its ends being secured to the pivoted fork and the frame loop above via substantial forked alloy caps containing metal-sleeved rubber bushes. The forked ends — reminiscent of pre-war Velocette racing practice — became something of a trademark as the makers of proprietary units standardised on simple bush-bearing steel eyes welded to the base of the damper body and attached to the top of the damper rod. Even when AMC had abandoned Jampots for Girling units, the bottom fixing remained an alloy item — the Girling units were threaded to accept it.

The Candlestick had a number of failings. It was rather softly sprung — the coil spring mounted over the damper assembly was single rate with no provision for altering pre-load — and prone to leakage. This was due to a combination of high pressures generated within the small damper body and fairly primitive seal technology. Although the seals were protected by a pair of telescoping shrouds, and both auxiliary and main seals were modified, it was to no avail.

To make matters worse, AMC had included a filler plug at the top of each unit. Since the damper contained a mere 50cc of SAE 20 oil, owners who felt that the ride was too soggy were tempted to remove the filler screw and 'top up' each unit. There was no drain plug. To empty the unit you had to secure the bottom end in a vice and release the castellated ring suporting the spring and shrouds. Then



Our illustration by Bill Bennett reveals the inner workings of the Jampot. Note the rubber bump stop under the top mount and the buffer spring inside the damper unit, sandwiched between a pair of bushes. At the lower end, the drain plug boss is invisible on the other side of the unit, but you can see the corner of the spacer/nut into which the bottom bolt was threaded from the left. This is a 1955-56 Jampot with the spring and shrouds supported on a bevelled ring located on the damper body by a circlip. The earlier, 1951-54



type, a threaded steel collar, is shown to the right. A peg spanner locates in two of the four holes on its under side for removal, always a difficult task as the alloy of the damper body forms a corrosive seal with the steel of the collar

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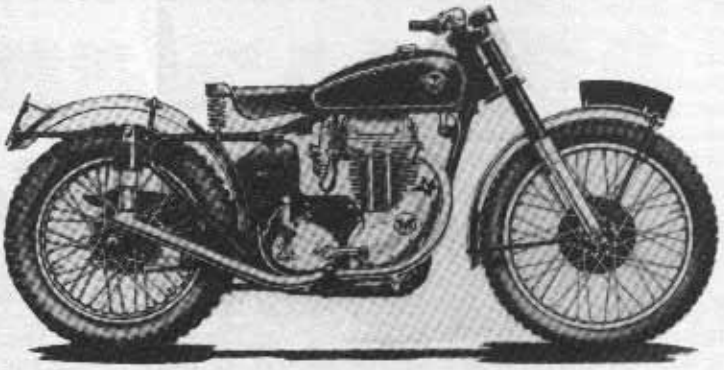

1952 Matchless G80CS fitted with Jampot rear units. The units were used on road, racing and off-road machines

you could reverse the unit to unscrew the body, checking the amount of oil by pouring it into a measuring glass after removing both shrouds and the spring. Because most of AMC's 1949 and 1950 production went for export, you see very few Candlestick-equipped models in England. I've only ever encountered one example. Keep your eyes open, though, for those protruding filler plugs.

Like its predecessor, the Jampot is fully rebuildable, and today virtually all of its component parts with the exception of the forked end caps and alloy damper body are available from a number of sources. The unit is certainly massive around the midriff. The coil spring over the damper body, which contains a replica of the AMC front fork internals and 85cc of SAE 20, measures 2¾in across. The solo Candlestick spring had a free length of 8⅝in, the Jampot 5¾in. Heavier wire — 1/12in as opposed to 5/16in — was used for sidecar rate springs in Jampots.

AMC told the press that their reasons for a change of design were three-fold. With the Jampot they had been able to employ the silent fabric shuttle valve in the front fork. Candlesticks apparently had a tendency to 'clack'. The load on the oil seals was now 'almost negligible', and there was not the same sensitivity to oil content. With the earlier design the quantity of oil in each leg needed to be accurate to within 1cc. Jampots were mounted vertically on road machines, but inclined forward at an angle on the Porcupine, 7R and G45 racers.

Interestingly, the Jampots were said by *Motor Cycling* to allow *less* wheel movement — with a stroke of 3⅛in — than the earlier design. This hardly squared with *Motor Cycle's* 1949 report of 3in total movement from the old units. The confusion typifies the claims and counter-claims of the period, but Jampots probably do allow slightly less movement. One of AMC's prime objectives was to curb bottoming. In 1952, the *Motor Cycle* columnist Ixion was amusing his readers by asking what sort of suspension movement was ideal. He recalled winding up one firm's engineer at the '51 Show. '"What," I inquired meekly, "do *you* consider the ideal movement. Five inches each way?" He looked at me sharply. (Had I said something idiotic?) "Who claims that?" he demanded suspiciously ...'

In order to confuse and dismay future generations, AMC specified a drain plug to the rear of the bottom alloy forked cap for 1951. Thereafter the boss was left undrilled and untapped, for this useless appurtenance was not matched by a Candlestick-type filler at the top.

From '51 to '53 the lower spring shroud wasn't chromed, but Argenised. This was a semi-matt silver finish also found on wheel rims and front fork oil seal holders during the nickel shortage caused by the Korean war. Today everyone seems to buy either chromed steel or — and these are even more popular — polished stainless steel lower shrouds. I think that's rather a shame; the Argenised finish is rather attractive. The top, outer shrouds were always enamelled.

To mitigate the effects of bottoming out, the Jampot was equipped with a doughnut-shaped rubber bump-stop below the top mount. Topping out was restrained by a light buffer (coil) spring within the damper unit.

After the drain plug had been deleted, the next thing to disappear was a leather washer under the uppermost damper oil seal. Larger leather washers were still to be found forming a cushion at each end of the singe-rate spring. Again, there is no provision for pre-load adjustment. The washers that cause most trouble are those on either side of the base of the damper tube. This flares out and then terminates in a circular plate. Fibre washers sandwich this and with age they turn mushy, allowing damping fluid to escape.

AMC described the ride on Jampots *sans* their oil as 'lively'. Other folk use different expressions. Ron Hughes, the AJS and Matchless club's spares co-ordinator, told me that a Jampot-equipped machine will 'pogo all over the place'. When this happens, after many thousands of miles of floating down the road, you'll probably want to strip the whole unit. This is where you'll discover AMC's big mod on the Jampot. Most are fitted with a threaded steel collar which supports the spring and shrouds about the alloy damper body. In 1955 this was changed for a plain, bevelled, chromed steel ring. Instead of being threaded, the alloy damper body was grooved to take a circlip.

The reason for this modification was simple: you had and still will have one hell of a job shifting the threaded collar. The steel and alloy form a corrosive bond that is very hard to break. The club spares scheme sells a substantial peg spanner of heroic proportions which locates in two of the four holes on the underside of the collar.

In fact the club spares scheme must be the place to buy Jampot spares. It is also a repository of Jampot — title of the AJS and Matchless club's excellent journal — lore. Beware if you wish to polish the exposed outside of the Jampot's alloy damper body. One enthusiastic restorer polished so hard that he took most of the bottom shoulder off the circlip groove. Result: that particular unit disassembled itself on the move, which must have been rather disturbing.

Our list of parts suppliers includes the address of the club's membership secretary. To obtain parts from the spares scheme — 10 per cent discount — you must first join the club. That costs £10 a year, with a 50p joining fee. Membership of the spares scheme, whose stock runs to ten foolscap sheets, is an extra £5 in the first year, £2.50 on renewal. I'd say that it's well worth the outlay.

So how good were Jampots? They provided a pretty soggy ride, could and can be bottomed on rough going and had long been overtaken in terms of performance by proprietary units when they were dropped. In 1952 Girling, Armstrong and Woodhead-Monroe had all announced suspension units for motorcycles based on their automotive experience. While the company's competition riders fumed, AMC's boardroom politics kept the Jampots in existence.

There remains one point that any engineer would instantly dismiss as an irrelevance. Don't they look nice? The emotional response of the public to the chubby Jampot was instant and enduring. As someone put it to me: 'The sight of a G45 (the parallel twin racer) with inclined Jampots is so aesthetically pleasing.' I couldn't agree more.

PARTS SUPPLIERS

AJS & Matchless OC. Membership Secretary, Terry Corley, c/o Trojan Finance, 13B Rowan Rd, London SW16 5JF; Russell Motors, 125-127 Falcon Rd, Battersea, London SW11 2PE (01-228 1714); Hamrax Motors Ltd, 328 Ladbroke Grove, N Kensington, London W10 (01-969 5380); Joe Francis Motors Ltd, 340 Footscray Rd, New Eltham, London SE9 2ED (01-850 1373).

Several firms offer shrouds, including Andrew Engineering (Leigh) Ltd, 177 Chapel St, Leigh, Lancs (0942 608197); Dave Hodge, 104 Northcroft Rd, London W13 (07842 52546); Doug Richarson, Eel Pie Engineering, Eel Pie Island, Twickenham, Middlesex TW1 3DY (01-892-8824).