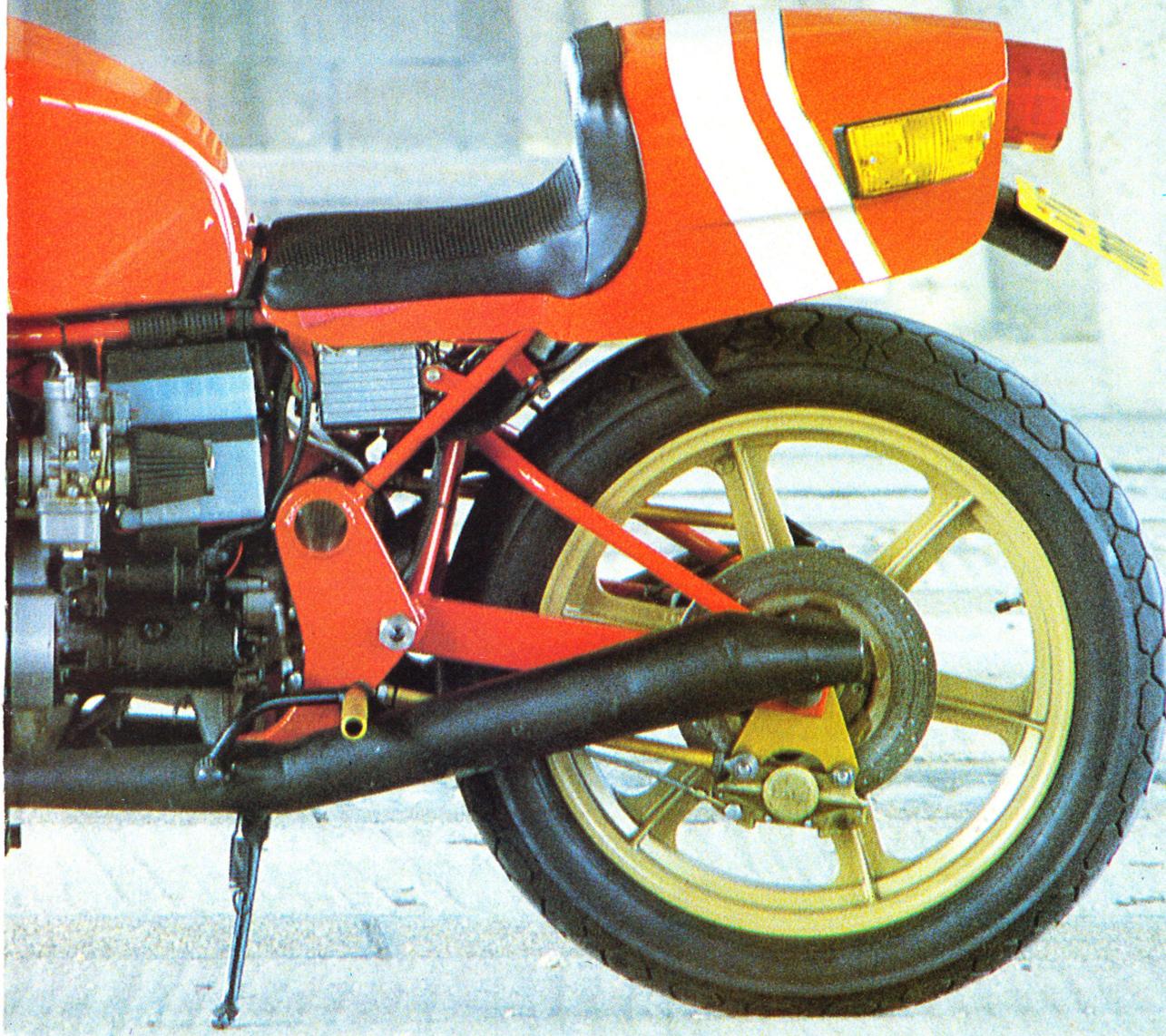


SHOCKING RED

Can this really be a Moto Guzzi V-twin? 105bhp, leading link forks, monoshock rear suspension? Dick Wood's special is a collaboration between British chassis ingenuity and Italian engine genius. By Dave Calderwood.



THE dull throbbing developed a hard, painful edge ... and a noise. This was no ordinary hangover, that much I could fathom. A gap in the side of my tent, created by a renegade burning log from the campfire the night before, let in more noise and the thought came in: the Duke is still going! In the interests of objective reporting, I stumbled out of the remains of the tent and joined the rest of the unshaven, bleary-eyed crowd at the side of the track.

No, the Duke wasn't still going. That distinctive noise I'd heard wasn't an abnormal hangover either — it was a solitary Moto Guzzi, its exhaust note standing out defiantly against the wall of noise from the four-stroke multis dominating the field. This was my first visit to a 24-hour endurance race, the early season Le Mans event, and this anachronism captured my imagination as did the whole atmosphere of frenzied torture being inflicted upon racing men and machines out there on the track.

A similar bike — it may even have been the same team — captured the attention of Dick Wood at the Bol d'Or championship 24-hour race at Paul Ricard circuit in the south of France in 1981. He noticed the Guzzi racer being campaigned by Motobecane, West German importer of Guzzis, had an unusual chassis with an underslung monoshock rear suspension and a fully floating rear final drive shaft. It was this moment of technical admiration that inspired Dick to build his Guzzi special as a road bike.

Dick Wood is a partner in the Guzzi specialist firm of Moto Mecca, along with Italian Vincent Marcello. Now based in Clapham, south London with a showroom for new bikes and accessories, a workshop and a warehouse of spares, Moto Mecca originally started in August 1980 in the front and back rooms of Dick's house. Then the spares-by-mail order business was merely a part-time job in addition to his work with the BBC. The partnership with Vincent and subsequent move to full-time and proper premises came a year later.

A Guzzi man since '76 and an active member of the Owners Club, Dick was well placed to build his Bol d'Or special, especially as he'd convinced Vincent it would make an ideal rolling advert for Moto Mecca. Work started on the bike in 1982 when Dick approached various frame companies using an article from the West German magazine, *Motorrad*, on the Motobecane bike as a basis. No one was really interested, though Harris were willing to modify their existing Magnum chassis, until he reached the Maidstone, Kent workshop of Tony Foale.

Tony is a bit of an oddity himself, flying the face of fashion

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with his spine tube based rolling chassis kits but he could see the potential in building one of his frames for the V-twin motor. After all, his theories were based on the straightest, strongest connection between steering head and swing arm pivot and the Guzzi's cylinder layout was perfect. He'd been planning a similar project for a BMW flat-twin motor (which has now appeared — the 'QL') and agreed to make a frame and possibly fit a special front end he'd been working on. That idea was deleted in the end since so much of the Guzzi was experimental and a set of Tony's proven leading link forks used.

It took almost a year to build the rolling chassis around a set of crankcases Dick had earmarked for the bike and about the same time as it was coming to fruition, Moto Mecca's contacts with the factory revealed that Bruno Scola was about to set up in business tuning and preparing Guzzis for fast road use and racing. Since Scola had been with the Guzzi factory for 15 years, mostly in the works racing dept amassing priceless knowledge about the big V-twins, he was the obvious person to approach. One of Scola's final projects had been a watercooled V4 for the factory — where is it now?

Scola set up a shop with a dealer in Lecco, close to the factory. As Dick says, 'for every single poser in England there's 10 in Italy' so he was assured of a future. Scola showed Dick a big bore 1105cc kit which was the absolute maximum the Guzzi could be taken out to. Dick's crankcases were modified to take the 95mm cast iron liner and 10.5:1 compression slipper pistons fitted. These have a reduced width gudgeon pin and short skirt to reduce weight — a full size piston would strain the standard con rod.

T3 cylinder heads were modified to take 51mm diameter inlet and 43mm exhaust valves — standard Le Mans spec is 44mm inlet and 37mm exhaust. The head was also machined by Bruno so a portion portruded into the barrel to form a good gas seal rather than just rely on a gasket.

Bruno lightened the crankshaft by drilling through the centre and replacing steel with an aluminium plug. Crank and con-rods were highly polished, and the flywheel and clutch unit 'severely' drilled and machined to reduce the weight down to one-third of its

original. The clutch uses competition springs and Guzzi's standard two friction plates replaced by sintered metal plates. These were Surfex parts made by an Italian firm called Rimaldi. The whole rotating assembly was balanced back in the UK.

Le Man '3' big end shells were used since they're slightly softer metal than earlier ones, lasting longer and less prone to scoring the crank — they're now fitted as standard to all the big V-twins. Camshaft is a regrind called 'Super Sports' in the time-honoured Italian tradition. Bruno says it's his profile but there are several claimants for this. He finished the head with competition valve springs and then lightening the rocker assembly by 20%, polishing and then machining to accept needle roller bearings. These work with the standard rocker pivot pins but have a special bush between to maintain oil pressure in this otherwise all plain bearing motor. In fact, Dick was still worrying since oil pressure was a shade low at tickover rpm.

The Guzzi engine was designed to use a gear timing set rather than the chain used on later engines. A helical steel timing gear set was fitted, replacing the chain which tends to stretch after 20-30,000

miles beyond the capabilities of its tensioner.

Carburation is a pair of PHF41N Dellortos — bored out 40mm — with 42mm inlet manifolds matched to the polished head ports. Ignition is Lucas Rita which, says Dick, makes it start first stroke every time. Just as well since the Foale spine frame goes right where the Guzzi battery normally sits and Dick had to compromise with two 12V 12Ah batteries wired in parallel — less than standard but enough with a quick firing motor.

Actual gearbox is standard with a V7 Sports final drive crown wheel and pinion fitted for a taller overall ratio. Seems the old 750cc twin was higher geared than later, more powerful 850s. It will pull higher still, says Dick, and he has a racing ratio pinion which he would have fitted but for a mismatch of splines. The V7 ratio allows an extra 8mph in top gear at 7500rpm, the safe rev limit.

The really interesting bit of the transmission is the fully floating drive shaft and hub. Principle is the same as fully floating rear brake — which this bike also has. Left as normal, as the engine accelerates or decelerates, torque reaction affects the rear suspension. On racing Guzzis it



can be bad enough to make the back wheel hop on the approach to turns especially if the road surface is bumpy and the suspension can't absorb the shocks. Feathering the throttle in a turn can have a dramatic effect too, enough to make the bike lose traction. By arranging the final drive so that the force are transmitted to the frame with the rear suspension and swing arm left independent, there's no such reaction.

Tony Foale achieved this very simply. Drive shaft has been cut down around its outer flange and left exposed (needing a special oil seal on the drive box). The drive box or hub pivots on the rear spindle supported on the drive splines to the rear wheel and by

bushes on the spindle. There are two separate universal joints at each end of the drive shaft, just as on a rear wheel drive car. Dick's drive shaft was made up from a Guzzi Convert and a Le Mans joint. Note how neatly Tony Foale has made the front UJ pass through the swing arm though he admits he'd do it differently — more simply — if he did it again.

The swing arm now pivots free of interference from the final drive and has a conventional cantilever brace up to the single De Carbon shock absorber. No rising rate linkages, just an adjustable damping shock. The rear suspension works fine, says Dick, but the leading link forks are too firm. A Girling Gas Shock sits inside each fork 'leg' fitted with

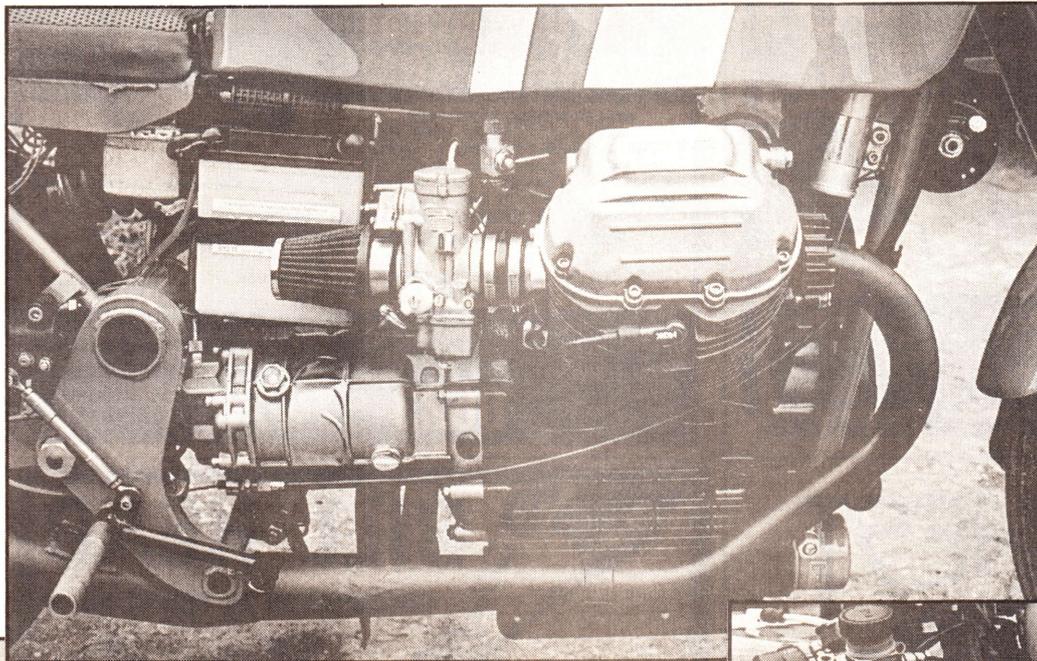
80lb springs from Alf Hagon. Dick's looking for softer springs which'd improve it no end. However, it still works extremely well with absolutely no flex, anywhere. Looking at the construction and width of those forks. I'd say they wouldn't dare flex but their ungainly looks are probably the only reason that big modern mass production bikes aren't fitted with them.

Brakes are the latest Brembo floating rotors — twin 280mm at the front — gripped by four piston calipers mounted on a floating alloy plate made by that man Foale again. Since Moto Mecca are now the official Brembo importers, Dick has access to all the goodies. Rear is an unusual caliper — a Lockheed 'clone'

made by Brembo used because its mountings lend themselves to floating operation. Rotor is standard Le Mans. Brake hydraulics are independent rather than using Guzzi's integral linked system. This is because there was so much different about the bike that the 75/25 front/rear effort split was unlikely to be correct.

Frame is similar to Tony Foale existing kits but with removable downtubes supporting the engine — there's no under engine cradle at all. Rear of the gearbox is the other engine mount and — a plus this over standard Guzzis — with the downtubes removed and the gearbox/crankcase bolts undone, the engine can be dropped leaving the gearbox in situ.

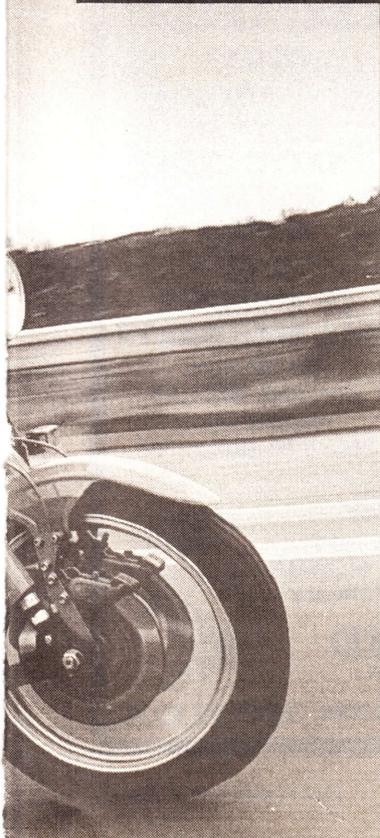
Finishing the bike didn't take too long thanks to careful planning by Tony Foale. He arranged all the electrics to fit almost exactly with a standard Le Mans 3 wiring loom, and a LM3 instrument panel is used. An illegal but potent Cibie Oscar H4 headlamp is fitted with a 100/80W bulb, and a small half-fairing is planned at some stage to finish the front end. The bike's still running in but incredibly responsive already, says Dick. Well, he would. There's less torque reaction with the much lightened flywheel assembly but, conversely, engine vibes are much more noticeable. Bruno Scola estimates max power around 105bhp at 7500rpm which isn't as outrageous as it first sounds. A standard good Le Mans should show 70bhp and Dick's special has 31% more capacity plus a much higher state of tune. At 1985 prices, he estimates there's £5,000-worth of parts and specialist work in the bike.



Above: Engine is 'old' style V-twin taken out to 1105cc. Exhaust is a much modified factory system. Note external oil filter, a conversion offered by Dick's Guzzi firm Moto Mecca.

Right: Leading link forks are Tony Foale's own design using a Girling Gas Shock on each linkage and leg. Front is incredibly rigid with no trace of flex — should be standard wear on most big bikes? Brakes are the latest four piston Brembo calipers and floating 280mm discs.

Dick Wood and his special — three years of hard work inspired by a Bol d'Or racer.



PERFORMANCE

BIKES

& MECHANICS

May 1985 90p (USA \$2.75)

WIN

Swagman Soft Luggage
And A 108mph 125

SHOCKING RED

1105cc, Leading Link Forks, Monoshock Rear End...

This Aint No Ordinary Guzzi!

