



ONE

BMW give the R80 the single-shock treatment

CHANGE for BMW is about rare as British Telecom getting a call right first time, or so it would seem. But not only has the launch of the four-cylinder K series completely revitalised the German company's model range up in the heady heights of the litre class but the Ks are now affecting the 800cc boxer twin.

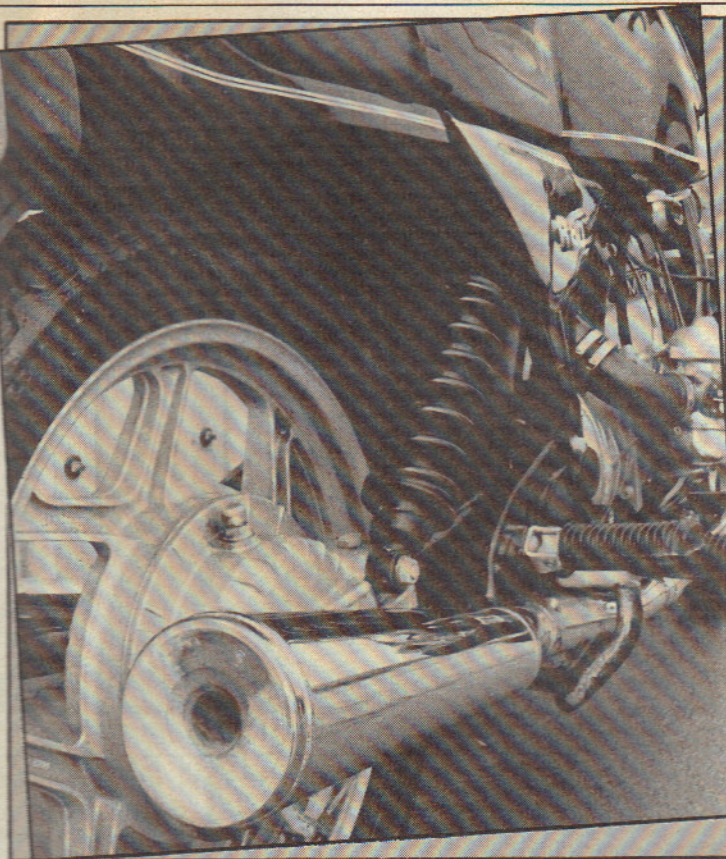
The latest R80 version comes in a BMW 'classic' guise similar to a few years ago. They've forsaken the weird R80 GS trail bruiser and the ST sports bike and returned to roots. But it's a much improved R80 if a mite less powerful. The new R80 isn't fast by anyone's standards and compared with the latest hotshot 750s from Japan it's a positive slug with a top speed of just 112mph. As with all the BMW boxer twins, the R80's charm is to be found on strips of tarmac other than the timing straight at our test circuit.

Major changes have been made all over the R80: frame, forks, rear suspension, wheels, exhaust, valve gear, ignition and ride position. It's unmistakably still a BMW, however, with a tauter than ever ride but retaining that distinctive exhaust note and high quality of finish.

Contributing to the improved ride and 'feel' is the modified frame. It's a single backbone frame with twin cradle loops which run down from the steering head, under the engine and bend up to join the top tube. Extra stiffness has been gained by a thicker gauge steel.

Up front, K series forks have been fitted with larger diameter stanchions and tubes, and a whopping 25mm diameter fork spindle. Two way hydraulic damping reduces the old BMW trait of diving under heavy braking and there's a solid feel without any undue harshness fed back to the rider through the 'bars. An alloy cross brace ties the fork legs together to resist one sided forces imposed by the single front disc brake.

The brace may contribute to the



Classic styling returns to the boxer twin but with latest suspension improvements, front and that rear monoshock. Colin Taylor reports.

secure feel of the front end but the combination of a 90/90 x 18 Metzeler tyre and the firm forks gives positive steering no matter how rough the road. The ride position is well forward which probably helps but you can scratch much harder than you'd expect and the front'll stick. The rear wheel can be persuaded to let go if you're too harsh with the throttle or brake while cranked over but generally the handling is spot on.

The most obvious difference between this bike and the old R80 is the Monolever rear suspension. The R80GS and ST were the first

BMW's to sport this single arm rear suspension which has now found its way onto most of the range. Taper-roller bearings provide support for the pivot of the Monolever arm which carries the drive shaft to the rear wheel crown wheel and pinion.

By mounting the single spring shock absorber at an acute angle, the suspension has a progressive rising rate achieved by the altering angle between swing arm and suspension strut as the latter is compressed. The force required to compress the spring increases proportionally as the angle

becomes greater.

Rear drive is similar to that fitted to K models. On previous boxers a needle roller and thrust washer were used to support the crown wheel. This has been junked in favour of another taper roller bearing which gives both radial and thrust support.

Cast alloy wheels wear tubeless low profile Metzeler tyres. Strength of the wheels has been increased following the spate of troubles BMW had in recent years; a thicker section is used plus a 'chill-cast' process which ensures an even cooling rate. By controlling the rate of solidification, internal stresses can be reduced.

It's impossible to tell this, of course, but what you can immediately notice is the lack of engine noise of the new R80. The familiar tapping noise from the cylinder head has been reduced dramatically by restricting rocker arm end float with shims and by inserting rubber bungs between the finning.

BMW's are hardly noisy bikes but the R80 has been made quieter than ever with a revised exhaust system which includes an expansion chamber linking the two pipes. This replaces the old twin balance tubes and helps cut noise emissions down by 3dbA, according to EEC tests. It's these ever stricter tests which have forced BMW to give up the litre boxer twins.

Optimists that BMW always are, they claim that the power output of 50bhp is to fit in with insurance categories in West Germany but the restrictions on breathing must be stifling the motor. Milder valve timing and a lower compression ratio also contribute to the power decrease. Unfortunately, the changes to the crown wheel in the rear drive meant we could not use our special adaptor to measure actual power output on the LEDAR dynamometer. However, BMW are hardly likely to stretch the truth about a lower power figure.

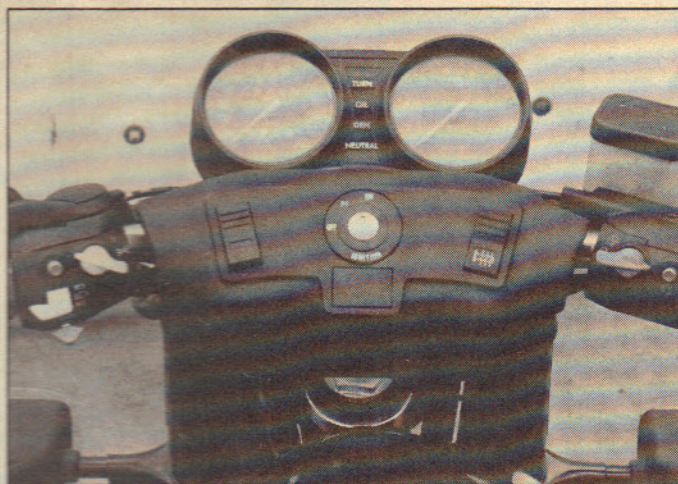
UPMANSHIP

In all truth, 50bhp is probably all the R80 needs. It'll lope along smoothly from as low as 1900rpm in top gear and accelerate with no coughing or shuddering. It'll rev freely to the redline at 7300rpm but if you do want to press on, it's happiest between 5-6000rpm where throttle response is instant. A sloppy gearlever linkage on our test bike meant selection wasn't always precise with a double stab occasionally required.

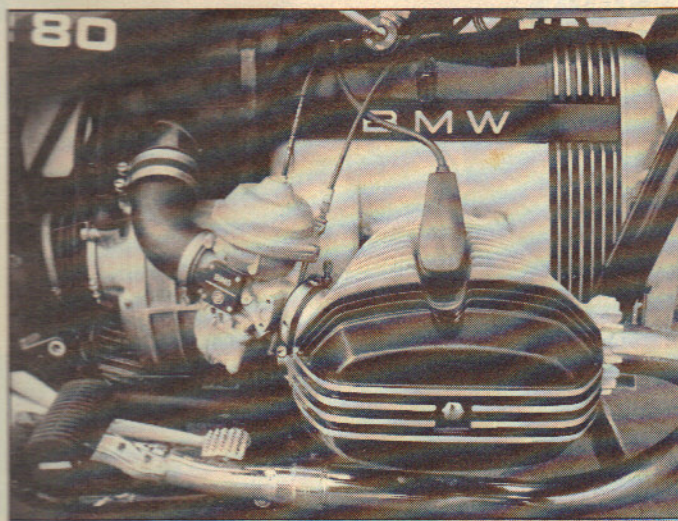
Fuel consumption varies tremendously on how hard you push the bike. Falling into the R80's 'lazy' mode will reward with around 50mpg while the worst figure was 40mpg. With a five gallon tank, you're guaranteed a decent mileage between fill-ups.

Front brake is a meaty Brembo caliper and larger single disc than before offering progressive feel and 'enough' stopping power. Mounts have been left on the right fork leg for another brake though BMW GB say it's not really necessary. While we'd agree for this model, the standard R80, the fully faired R80T which is likely to be carrying panniers, pillion and usual touring stuff could well benefit. That bike was definitely underbraked before as well as suffering from feeble forks which flexed noticeably.

One of the main reasons for BMW continuing with the aircooled twins at all, in the face of tough type approval regs, is that various police forces around the world want an easily maintained straightforward bike. Strange that one set of authorities threaten the bike's existence while another set, not totally unrelated, continue to buy large numbers. The police are right, of course. The world needs

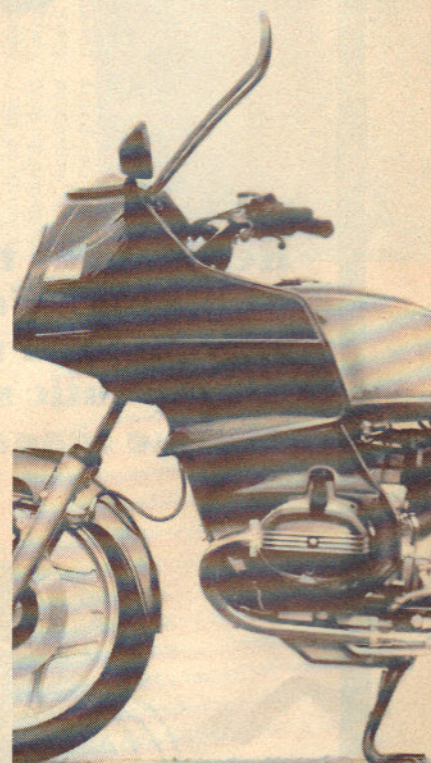


Above: Switchgear takes getting used to but is efficient. Extra switch on padding is for optional extra heated handlebar grips, only felt through thin gloves.



Above: simple engine means easy servicing.

vehicles which can be maintained without resorting to complicated electronic diagnostic equipment. The BMW R80 may be low tech in a world of increasing sophistication but it's definitely a relevant bike. **PB**



For an extra £515, the R80 comes equipped with the RT full fairing and suitable handlebars. Screen position is adjustable and there are two air vents. Protection offered by the RT is very good but we'd prefer to see an extra disc up front.

TEST SPECIFICATION

BMW R80

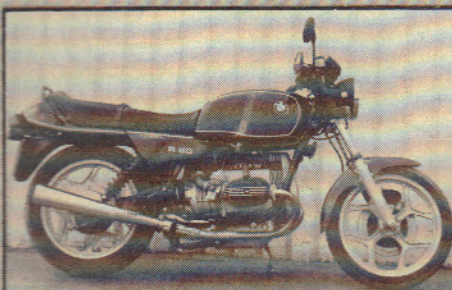
PRICE.....	£3150
Supplied by.....	BMW UK Ltd.
Warranty.....	12 months/unlimited mileage
Maximum speed	
sitting up.....	107.26mph
prone.....	112.33mph
Standing start 1/4-mile.....	14.3sec
Fuel consumption — average.....	46.0mpg
worst.....	38.5mpg

ENGINE

Type.....	Push rod, 2-cylinder, 4-stroke Boxer, aircooled
Bore and stroke.....	84.8 x 70.6mm
Piston displacement.....	798cc
Compression ratio.....	8.2:1
Carburation.....	Two Bing V64/32
Ignition.....	battery and coil (transistorised ignition)

TRANSMISSION

Type.....	5-speed, constant mesh, return shift
Gear Ratios.....	1st — 4.40, 2nd — 2.86, 3rd — 2.07, 4th — 1.67, 5th — 1.50
Primary drive.....	gear



Primary reduction.....	N/A
Final drive.....	shaft
Final reduction.....	3.20 (32:10)

ELECTRICS

Generator.....	280W @ 6500rpm
Battery.....	12V, 20Ah
Headlight.....	12V, 60/55W

CHASSIS

Type.....	Double-downtube, full cradle frame, single sided swing arm
Front suspension.....	double acting hydraulic damped forks 185mm of travel

Rear suspension.....	Monolever single shock with pre-load adjustment 121mm of travel
Castor/trail.....	na/120mm (4.7in)
Front tyre.....	90/90-18 51H Metzeler
Rear tyre.....	120/90-18 65H Metzeler
Front brake.....	single 285mm disc (twin discs optional)
Rear brake.....	200mm SLS drum

DIMENSIONS

Wheelbase.....	1447mm (57in)
Overall length.....	2175mm (85.6in)
Overall width.....	800mm (31.5in)
Dry weight.....	190kg (419lb)
Fuel capacity.....	22 litres (4.8gal)

TESTER'S VERDICT

Good points.....	handling & finish
Bad points.....	misting of instruments
Performance.....	lazy
Economy.....	reasonable
Handling.....	very good
Comfort.....	good for rider, average for pillion
Braking.....	adequate
Equipment.....	standard BMW quality
Value.....	good long term investment