

Simple Alternative

Kawasaki's Z250, three years in the making

THOUGH CRITICS might not care to admit it, one suspects that sometimes their jibes at Japanese motorcycles are prompted by nothing more heinous than the international popularity of the Japanese. Like Springheeled Jack, Jap bikes pop up everywhere, and at fairly predictable intervals, to judge by the letters pages in the weeklies, John Bull roars with a terrible indignation and demands to know where it will all end.

History, however, suggests that the possibility of one nation achieving total domination of the market is remote, for whenever a monopoly has seemed imminent in the past something has occurred to prevent it; and while there are riders who choose not to run with the majority, small firms will find a living in a world of giants. Fifty years hence the market leaders may be Afghans, and Oriental producers forgotten, who knows?, but meantime one point bears repeating: the Japanese still set the standard.

A good example of the value for money they give is the Kawasaki Z250 Scorpion. Three years in the making, it is a neat all-rounder, well mannered, easy to maintain, quite fast, and at the other end of the scale it ticks over with side valve (remember them?) certainty. A longish test showed up no glaring fault... the bike was on loan for just over a month during which time it did 1,148 miles... and confirmed earlier impressions that Kawasakis have in the Scorpion a viceless and most attractive machine well able to take on the mechanically more complicated offerings from Honda, Yamaha and Suzuki in the lucrative two-fifty market.

The Scorpion story began in May 1975. Market research revealed that the British rider wanted an all-round workhorse rather than a plain commuter bike. It would have to look and

handle like a sports machine and combine performance with flexibility. The fact that learners here are restricted to under-250cc models and the possibility of more stringent anti-pollution legislation in the future led Kawasaki to design a completely new four-stroke machine especially for Britain.

Much debate followed the first drawings and styling sketches, but by the end of 1975 that stage of the job had been completed and a wooden mock-up of a machine produced for evaluation. In April 1976 an initial batch of five engines was ready, and 14 engines were finished in May. Early problems with insufficient lubrication of the big-ends, incorrect cam timing and rapid rocker arm/cam follower wear were soon overcome and several engines were put into frames for road and track testing.

In October the prototypes were demonstrated to Kawasaki UK personnel and compared with specimens of all the leading machines from the opposition. British test riders approved of high-speed performance but found fault with medium-speed manners and commented on excessive vibration and mechanical noise. Also, UK personnel called for a rear disc brake and cast wheels as standard fittings.

A batch of Mark Two prototypes, produced between March and June in 1977, incorporated many modifications: the crankshaft was changed from 360 degrees to 180 degrees type, engine-mounting points were reduced from five to four and sleeved with rubber, the clutch gained an extra plate, and improved rubber dampers reduced mechanical noise. Further measures to make the engine quieter included reducing all clearances, casting in a metal rib to prevent cylinder fins from ringing, and making the oil pump gear in nylon.

Six of the Mark Two engines were built for bench testing and eight more were run in complete machines and results were satisfying. Works testers reported that vibration had been eliminated... moreover, without recourse to balance shafts... and mechanical noise was no longer obtrusive. As several details still required attention, pre-production models (six engines and 19 complete bikes) which followed were modified. Carburation was improved and oil leaks from cylinder head gaskets were eliminated.

While some machines were tested at the Fuji race circuit, others were flown to Britain for further appraisal and as the bikes were still top-secret they were disguised and exhaustively tested alongside two-fifties from rival factories. A few points were criticised, so in June 1978 a final batch of prototypes, comprising two engines and 17 machines, was assembled and this time complete satisfaction was expressed, the machines being declared ready for mass-production. Kawasaki estimate that development work had cost about a million pounds.

Externally the production two-fifty differs in several ways from early models: it has two carburettors instead of one, an extended rear mudguard, drilled discs and a revised treatment for tank, front guard and side panels.

An air-cooled single-overhead camshaft twin of 248 cc, the engine has bore and stroke dimensions of 55 x 52.4 mm, compression ratio of 9.5:1 and is claimed to produce 27 bhp at 10,000 rpm and maximum torque of 15.2 ft-lb at 8,500 rpm. A chain driven from the crankshaft centre operates the camshaft (there are two valves per cylinder) and primary transmission is by gears.

Two 32 mm Keihin carburettors draw air from an oblong moulded chamber with a quickly replaceable filter element... we assume such matters are of importance to readers and therefore timed the operation. The sequence was: pull off side cover (three seconds), unscrew

a wingnut and remove washer (10 seconds), withdraw cartridge (two seconds), slide in "new" cartridge, etc (some cheating here as the "old" cartridge had to do) — from start to finish, say, 40 seconds. It is hard to imagine a simpler arrangement. Filter renewal is recommended every 10,000 miles.

One of the new breed of kickstarter-less lightweights, the Kawasaki relies on a push-button hard by the throttle grip to spin the engine, which in the interests of straightforward servicing has a battery and coil ignition system. A "choke" lever on the nearside carburettor aids starting when the temperature drops below 60 degrees F.

Kawasaki, aware of the re-emphasised need to conserve energy resources, specified two cables for each carburettor to give precise control of the butterfly throttle valves. Open and close wires keep each valve in tension and any tendency for the valve to ride on the gas column... which can happen with a single-cable instrument... is eliminated. The makers claim the two-cable system gives more miles per gallon and smoother carburation.

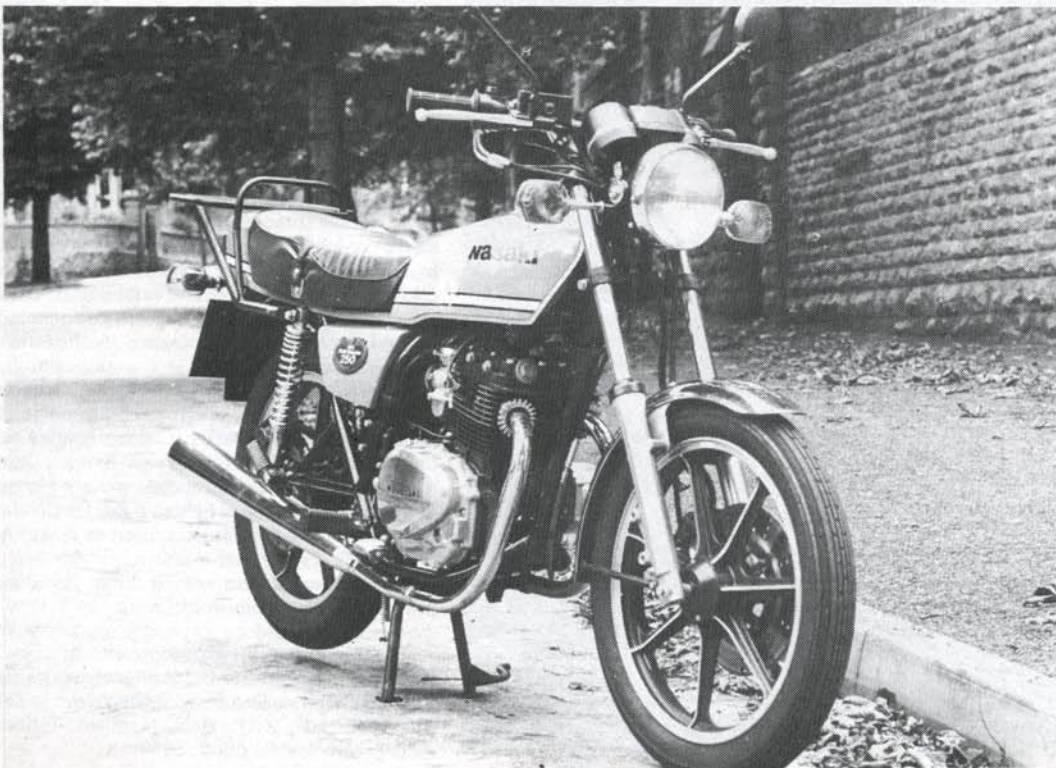
To ensure that valve settings can be adjusted when necessary with the minimum number of tools, Kawasaki have provided time-honoured screws and locknuts rather than the shims which are found on some of their larger machines; correct clearances for the Scorpion are 7 to 9 thou (inlet) and 8 to 10 thou (exhaust), set when the engine is cold. The only other moving part in the engine likely to require periodic attention, the camshaft-drive chain, is adjustable by means of a simple pushrod-and-locknut device behind the cylinders.

Primary drive is by gears and a common oil supply in the sump (capacity is three and a half pints) serves engine, six-speed gearbox and multi-plate clutch, and it is recommended that the oil-filter, removable by undoing one bolt, should be renewed every 10,000 miles. A glance is all that is required to check the oil level as the crankcase has a sight-glass. The final drive chain has a split link to speed maintenance.

An AC generator mounted on the crankshaft, which turns on three ball and roller main bearings with needle roller bearings for the big-ends, and a neat electric start motor installed on top of the gearbox provide sparks, and a 12-volt electrical system incorporates a 6-inch headlamp with a 35/35W main bulb. There are facia warning lights for neutral, turn indicators and main beam.

Suspension is orthodox (non-adjustable telescopic fork, adjustable shock absorbers rear, hydraulically damped) and so is the frame, a full cradle type with single downtube and duplex seat support tubes linked to a single top tube with reinforced headstock. The disc brakes, an 11 in unit front and 9¾ in rear, have Kawasaki's own sintered all-weather pads and seven-spoke cast alloy wheels carry Dunlop Gold Seal tyres (stamped "Made in Japan" though we are told they originate from Taiwan), 3.00S x 18 in and 3.50S x 18 in.

From the outset, the Scorpion impressed. Certainly it earned its keep while on test, being used for shopping trips and several runs from the Midlands to the Home Counties when the weather was changeable and pointed up the light handling, steady roadholding, useful acceleration and reliable brakes. In foul conditions particularly, the sensible layout of handlebar controls was appreciated. Indeed I gave it full marks and cannot imagine how it could be improved.



"It is a neat all-rounder, well-mannered, easy to maintain, quite fast... able to take on the mechanically more sophisticated offerings from the other Japanese factories in the lucrative two-fifty market". The rear carrier is an extra.