



Hartle had a less successful year than Surtees, but still finished second in the 350 and 500cc World Championships. Here he is on his way to finishing third at Ulster. His 500 MV four retains the earlier fork with external springs.

inherent superiority. Surtees pioneered a new cornering style to suit the MV four; hanging inside the bike to keep it more upright and prevent the wide engine grounding, while introducing controlled rear wheel drift. This way Surtees overcame the deficiencies of the greater weight and higher centre of gravity.

Surtees also responded to the gradual improvement in Avon tyres by improving the chassis. The single backbone duplex frame included a swingarm braced to the engine by the gearbox lugs. Although a leading axle fork with external springs was sometimes fitted, Surtees mostly raced with a centre axle fork with internal springs. The Girling shock absorbers still connected to the frame by individual extensions on either side. The wheels were now 18in front and rear, although rim width remained at a narrow WM2 (1.85in) because wider rims increased the tyre's rolling resistance and reduced top speed.

At the Isle of Man Surtees led the Junior TT from start to finish, at 151.230km/h (93.970mph), while Hartle retired with piston failure. In the Senior TT, Hartle's MV caught fire at Governor's Bridge after the fuel tank split, but Surtees went on to win at 158.735km/h (98.633mph). Surtees' double victory was simply a prelude to total dominance that year. He repeated the 'double' in Holland, Belgium, Germany, Ulster, and Italy, securing both World Championships with maximum points. Hartle finished second to Surtees in every 350 race after the Isle of Man, and in two 500 GPs, to finish second in both championships. Hartle also rode the 500 six at the Nations Grand Prix at Monza but retired. MV Agusta won all four World Championship categories contested in 1958, heralding the beginning of a golden era for the racing motorcycles from Casina Costa. Veteran rider Carlo Bandirola also won the 1958 500cc Italian Championship.

**Celebrating victory in the 1958 Senior TT – the beginning of a successful season. Surtees' MV is flanked by the Nortons of second-placed Bob Anderson (right), and Bob Brown. (Courtesy Two Wheels)**



# 2

## THE 600 (MV4C6)

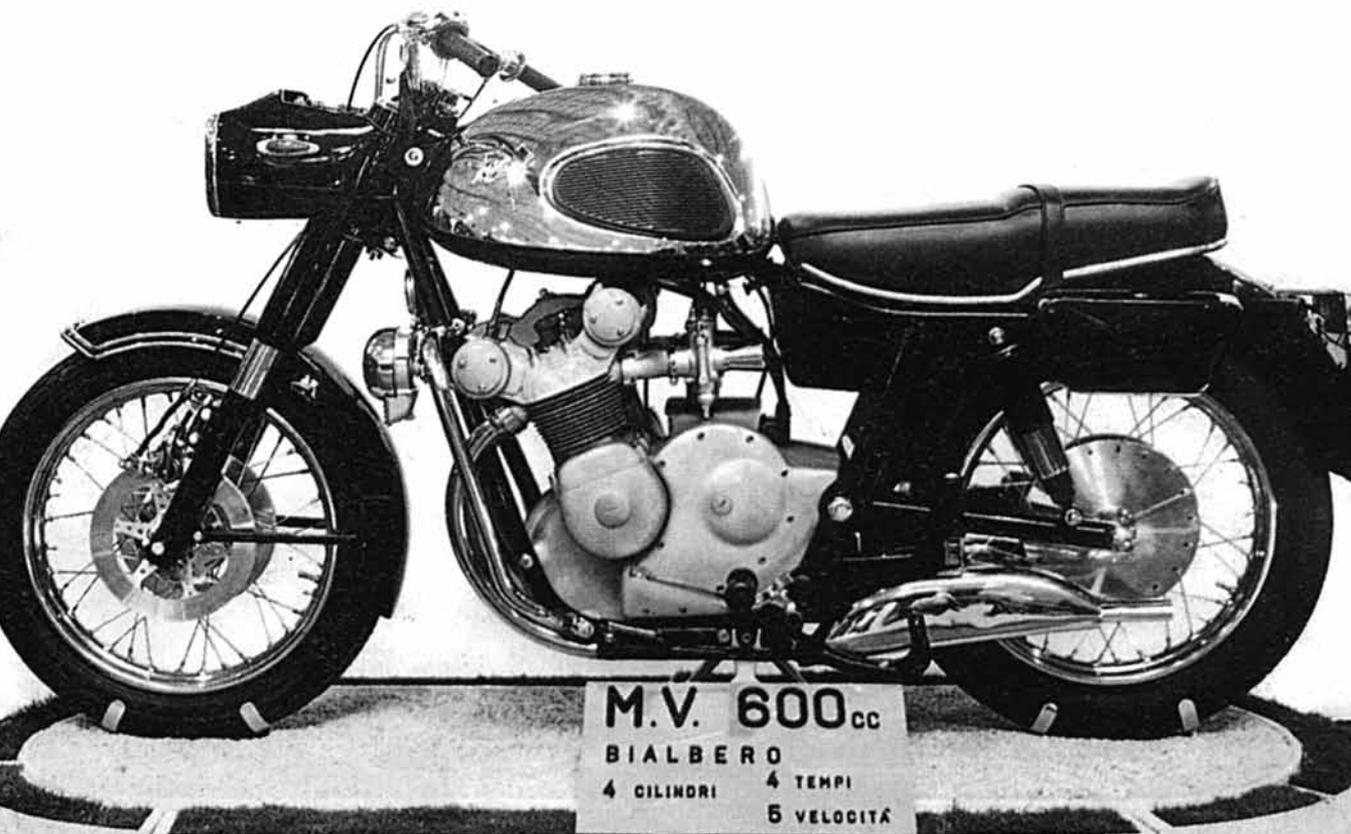
**A**lthough Agostini raced the 500 four early in the 1966 season it was already destined for replacement by the triple. And with the 500 four about to be pensioned off for racing, Count Agusta reasoned it was time to finally release a production version. By the early 1960s everyone had tired of waiting for the R19, but more rumours began to emerge regarding a production four. However, the early 1960s were still a grim time for Italian manufacturers, and the Italian motorcycle industry sank further into the mire that had begun in the late 1950s. This was now exacerbated by the influx of small capacity Japanese motorcycles, and all the major Italian manufacturers began to look at larger displacement models and export to the US for salvation. Ducati

produced a V4 1260cc Apollo, Moto Guzzi the 700cc V7, and Laverda the 650 twin, but it was the MV Agusta 600 that stole the headlines at the Milan Show at the end of 1965.

The most surprising aspect of the 600 was its design orientation. Here was the venerable Grand Prix four, undoubtedly the highest performing, most technically advanced and sophisticated production motorcycle engine in the world, placed in a touring chassis. Determined that no one would convert his four into a racer that could embarrass the factory machines, Count Agusta wanted the 600 to be a luxury grand tourer rather than a high-performance motorcycle. The 600cc capacity, electric start and shaft drive ensured the four wouldn't be raced, and the prototype was displayed at the 39th Salon di Milano. However, when the show opened on 4 December 1965 there were two empty plinths on the MV stand, delays in the preparation of the 600s seeing them arrive on 9 December.

According to Mario Rossi, MV's technical director between 1943 and 1978, it took only one year to develop the prototype 600. The first version as displayed at Milan had a bore and stroke of 56x60mm, 590cc, and a pair of Dell'Orto SS1 carburettors. The compression ratio was 9:1 and power was 52 horsepower

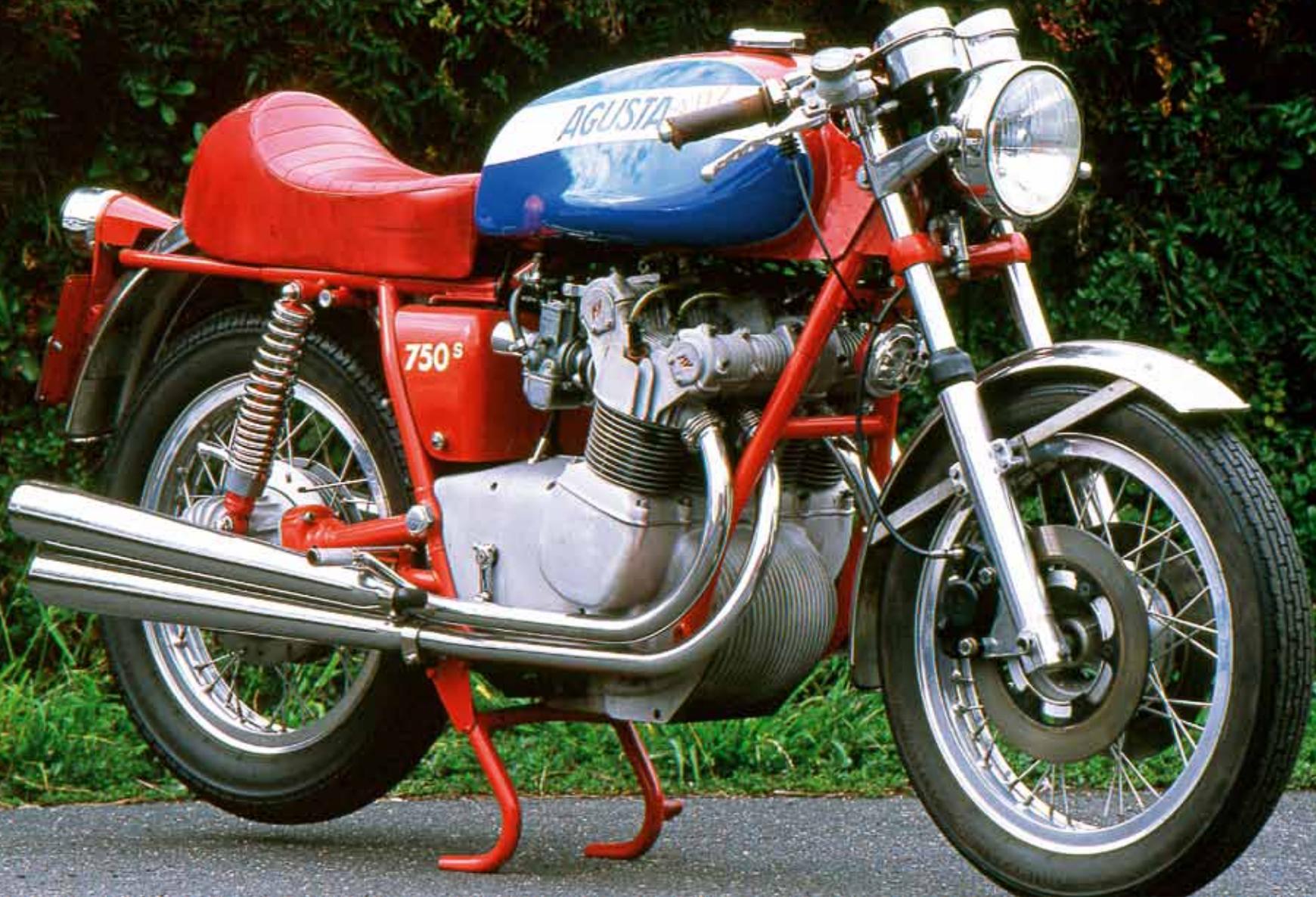
**The prototype 600 displayed at the 1965 Milan Show differed from the eventual production version in a number of details.**





was no surprise to see *Motorcycle* in the UK achieve a mean maximum speed of 112.34mph (180.8km/h) at the MIRA proving ground in October 1973. The standing quarter-mile was achieved in a leisurely 15.9 seconds (at 89.4mph) with the stopping distance from 30mph (48.3km/h) 30ft 6in (9.3m). Obviously, in response to these disappointing figures, the factory produced an interim updated engine during 1973. This definitely provided improved performance: testing an interim update 750 S in September 1973 *Motociclismo* managed 198.1km/h.





**The author's 1974 750 S (engine 214-0513) was a representative example, produced in June 1974.**

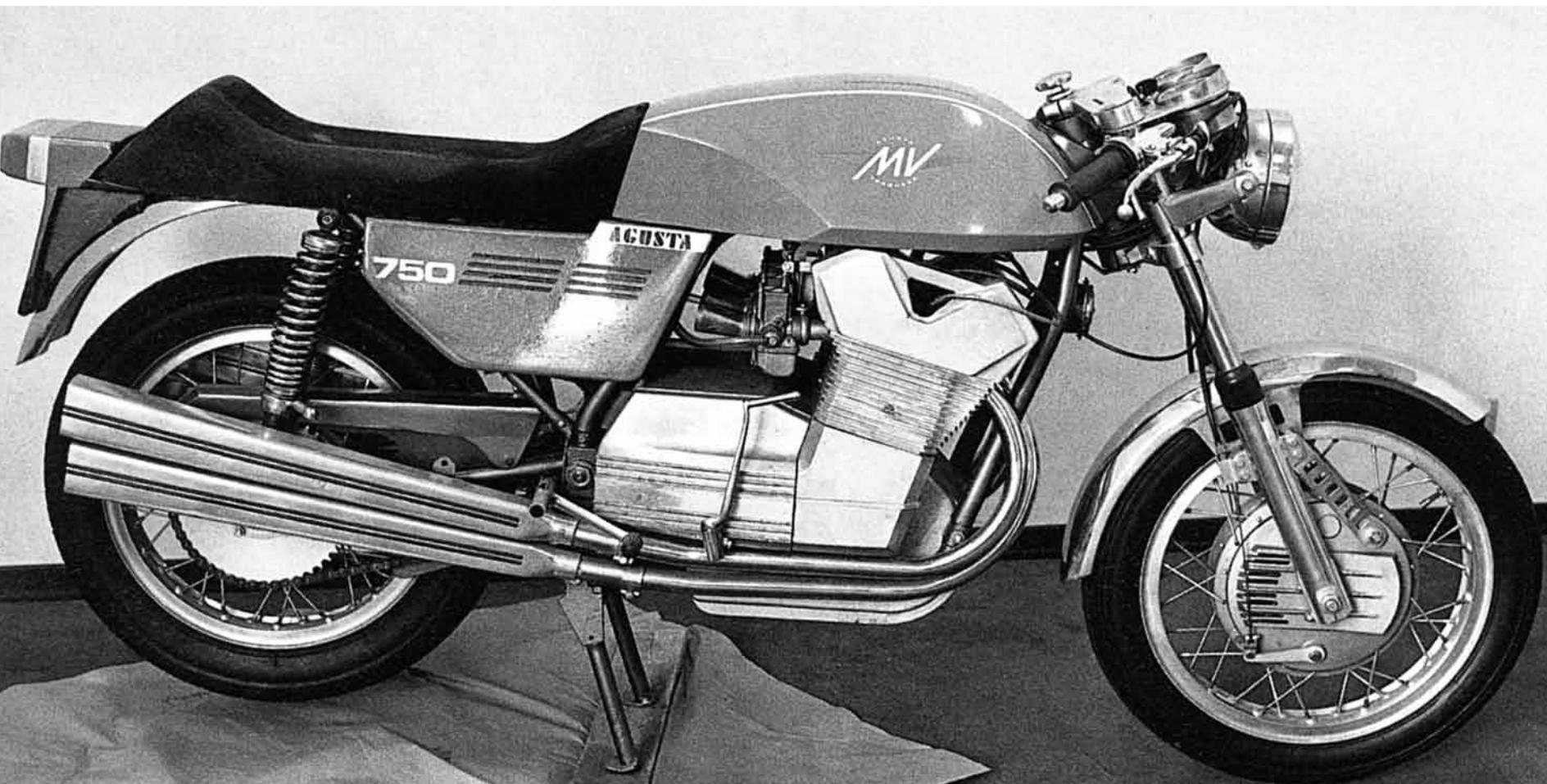
September 1974, US Department of Transport legislation called for a mandatory left side gearshift and the 750 Sport was predominately a right side gearshift model. Despite most 750 Sports still having the right side shift, after September 1974 it was possible to order it with a factory left side gearshift conversion.

### **ENGINE**

Although the engine number sequence continued with the 214 series, there were a number of significant engine updates to ensure

performance was improved. These engine updates continued after the interim 1973 updates, and were possibly incorporated after the summer break in late August 1973. The first engine after September 1973 was 214-0401. It is not certain that all engines built after this date included the updates, but a study of factory records indicates considerable consistency between engine number and date of manufacture, so it is possible. All 750 Sport engines with numbers higher than 214-0401 were built after 28/8/73.

Although the cylinder head was a carryover of the recast 1972



**Another prototype four mock-up, with angular styling and chain drive.**

inlet camshaft driven by a gear from the exhaust. The cylinder head design included four-valves per cylinder, with a narrow included valve angle to keep the design compact. Still air-cooled, the cylinders were steeply angled to improve airflow, but there was some doubt as to how this long, low engine could be integrated into a normal motorcycle frame. This engine didn't make it beyond the design and mock-up stage, but another plastic model of an angular 750 was produced during 1975. This was a strange mixture of early 750 S running gear, a racing frame with chain drive, and angular engine castings. Another unusual feature of this mock-up engine was a kickstart. Another engine design that made it to the prototype stage was a four with belt-driven double overhead camshafts. This included three external pulleys, with the belts covered by an outer cover similar to the Ducati Pantah. Bocchi had assisted in the design of the Pantah at Ducati, but after 18,000 kilometres of testing this was also discarded.

Although Bocchi also designed a new flat-four double overhead camshaft four-valve 500cc Grand Prix engine, it was rumoured during 1975 that MV was considering building a rotary valve 500cc two-stroke

Grand Prix machine. This was another Spairani initiative, and involved Dutch technician Jorg Moller, who was responsible for Morbidelli's successful 125cc Grand Prix racers. Although, as Corrado Agusta was committed to four-strokes, the idea was abandoned. Bocchi's flat-four four-stroke did make it to the prototype stage, but the initial results were unimpressive and this costly exercise was soon shelved.

Although Bocchi's new production four-cylinder engine was only a dream, the Imola 750 with a dry clutch and chain drive could have been released in 1976. However, the reality was that the aeronautical side of MV made a far more profitable concern than its motorcycle division. EFIM already had one unprofitable motorcycle company, Ducati, and its directors decided to close the MV Agusta motorcycle plant early in 1977. Some unsold Americas were converted into the 850 SS, or 850 Monza, and these were the last official four-cylinder versions available from the factory. The Monza was initially called the Boxer (after Bocchi's ill-fated new racing engine), but the factory soon changed the name. It has been suggested the name change was due to an objection by Ferrari, though this is unlikely as Ferrari also