



# Meteor on the move

*Les Wilson follows the manufacture of the BSA Meteor*

HAVING COMPLETED the previous two articles for *Airgun World* on the BSA Meteor air rifle, I was curious to see what changes had taken place in production since its introduction 26 years ago.

Last month James Edmiston, the new owner of BSA Guns Limited, invited me to the BSA works in Small Heath, Birmingham for a guided tour of the Meteor production line.

A year or so ago the entire BSA factory was consolidated and the works and offices were rehoused in a newly equipped, modernised single unit next door to the old factory site.

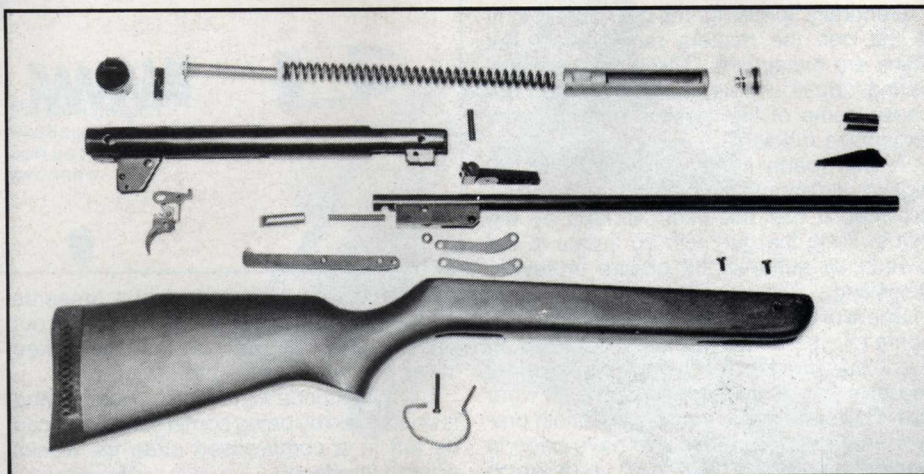
The works superintendent, Brian Coy, started my tour of inspection at the barrel mill. As readers will appreciate, any air rifle is only as good as its barrel, and barrel manufacture is a skill and craft perfected by BSA since the company's formation in 1861.

BSA have always been the largest supplier of rifled barrels in the UK, and the quantity of rifled arms produced by the company runs into millions. It is this experience which gives BSA air rifle barrels their excellent reputation.

Cut 16½ inch lengths of special drawn steel are received at the barrel mill from the Midland suppliers and are drilled, three at a time, on a gun drilling machine. The bars are rotated in the opposite direction to the special carbide cutting bits which are fed with oil at high pressure to lubricate the cutting edge and float the swarf out of the bore.

This process cannot be hurried, as the concentricity and finish of this precision drilling dictates the final accuracy of the rifle.

Ten minutes later the barrel, with its slightly over-sized bore, is ready for cold swageing of the rifling.



**The Meteor stripped to its basic components.**

Instead of each groove of the rifling being cut individually, the rifling in BSA barrels is hammered into the bore. A hardened mandril on which the impression of the rifling is cut is inserted into the bore, and the outside of the barrel is hammered by four specially shaped dies.

This hammering of 30 blows per second gives the inside and outside of the barrel a hardened, smooth finish and results in the barrel being stretched from 16½ ins to 19 ins reducing the diameter by almost .1 ins.

Each Meteor barrel is subjected to 21,542 hammer blows by this machine!

After being ground to final size, the barrels are crowned and recessed at the muzzle, and the breech end is machined for the barrel seal washer and chambered. The famous BSA 'piled arms' trade mark is impressed and the barrel block induction brazed in position. The barrel is now cleaned and passed to the barrel setter, who checks each one for bore finish and straightness.

Barrel setting is one of gunmaking's oldest skills. At BSA it is still carried out in the traditional manner with the setter shadow viewing the bore for straightness and correcting any distortions with one blow from his special hammer.

Setting is a skill requiring many years of training, perfect eyesight and delicate use of the hammer. BSA's Albert Hough has 51 years service, and his skill is one which cannot be replaced by a machine or computer — like so many of the old gunmaking traditions.

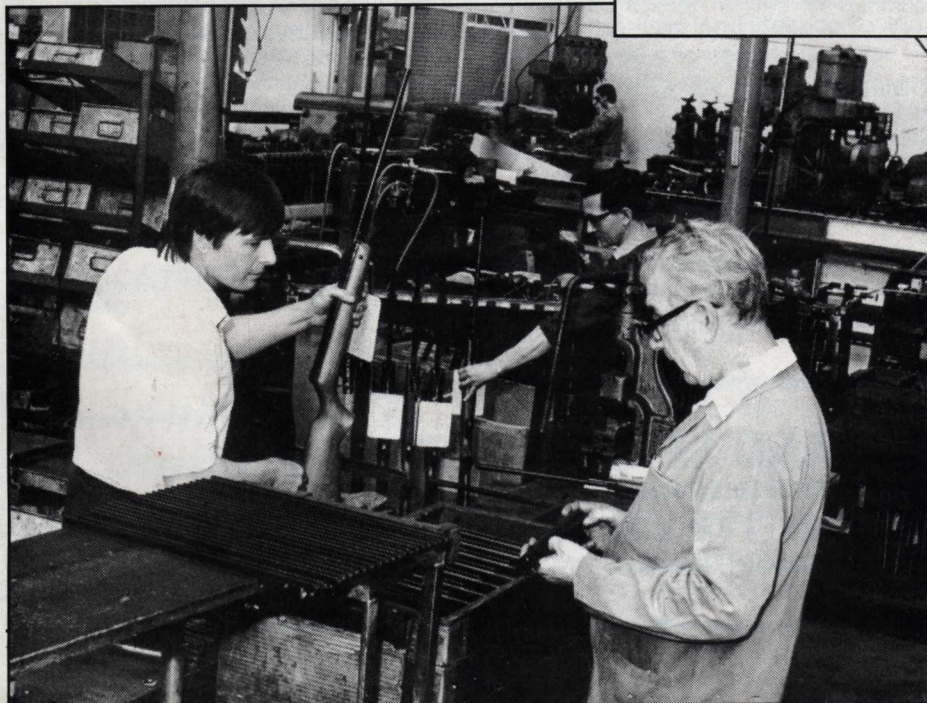
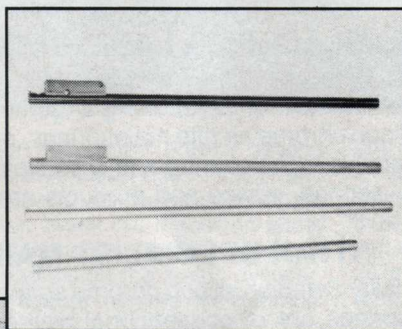
The air cylinder is made by raising and pressing a flat steel sheet requiring six separate operations before it reaches its familiar shape. The cylinder end plug — in which the transfer port will later be drilled — together with the side plates, are brazed in position, and the assembled cylinder is checked for air tightness under high pressure in a water tank.

The telescopic sight grooves are machined into the cylinder, which is polished internally to produce a perfectly parallel bore for the piston to operate.

I was then taken to see how every barrel and cylinder is carefully matched up and hand polished in preparation for the special Meteor finish.

This finish — unique to BSA — consists of a sprayed-on tough enamel, the recipe for which is still a closely guarded secret!

**Right: the four stages, from drilled bar before swageing (bottom) to finished barrel (top).**



**Left: part of the Meteor assembly line.**



