



Making Peugeot

Nine hundred mopeds a day are turned out with an efficiency that is fantastic to watch

AMONG the mountains of eastern France, stretched out along a road within walking distance of the Swiss frontier, lies a chain of small industrial townships, Souchaux, St. Louis, Valentigney and Mandeure, and it was here, over 150 years ago that the *Peugeot* concern was founded and where in each of these places present production goes on.

When we visited this interesting group of factories at the end of January the ground for a hundred miles around was white with snow under the black mountain trees, few vehicles moved on the icy roads and most of the population might have been hibernating for all we saw of them, but inside the great, warm and well lit factories industry at its most modern worked with smooth efficiency to produce the cars, trucks, mo-peds and bicycles.

Cycle and motor cycle production started at Valentigney in 1899 and has continued without interruption right up to today's output of 1,000 cycles and 900 mo-peds per day. Sporting successes came early with the motor cycles establishing world records at the turn of the century and a *Peugeot*-engined *Norton* winning the twin cylinder class in the first ever Isle of Man T.T. but the motorised two-wheelers marketed today are all mo-peds, five models from the modest BB.1.S with rigid forks to the ultra modern luxury BB.104.

The car industry, because of its huge output figures being coupled with high unit values can well afford capital outlays on a scale quite uneconomic in most other fields of industrial production and we were not surprised to see mass production techniques of the most up-to-date standards in operation at the *Peugeot* car factory at Souchaux. What did surprise us however, was the efficiency

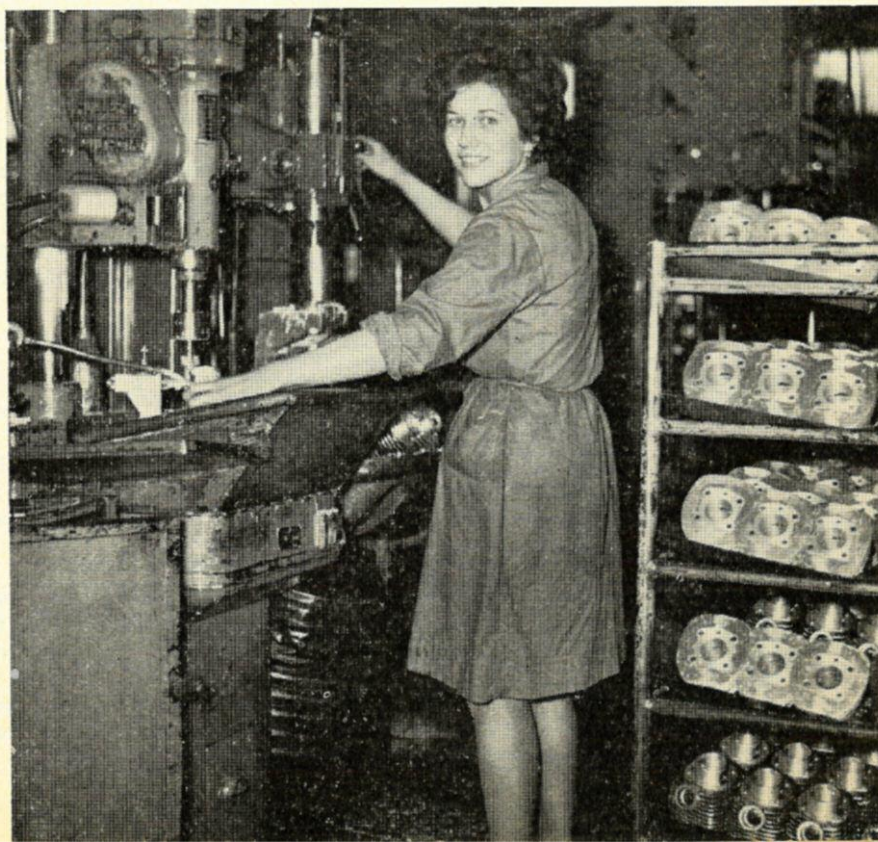
of the planning and methods organisation that enabled a new car to be driven off the assembly lines (under its own power) every 50 seconds whilst still providing a range of models, colours and trim with very high standards of testing, quality control and even rectification on the production lines.

This was mass production at its best with all its advantages for both producer and customer. Nowhere in the entire factory did anyone appear to be in a hurry and even the things that did not go according to plan, such as the windscreen that starred in fitting, were dealt with by the

assemblers without impeding the flow by even a fraction of a minute. Of course, the tooling is dead right for the job, quality of materials first class throughout and no-one who has followed one of those cars through from raw metal to the finished product would have the slightest hesitation in buying one himself.

As it happened we saw the car factory first and came out slightly dazed by the size and efficiency of it all. We were to see the mo-ped factory next morning and quite obviously it could not be anything but an anticlimax in scale—quite obviously—but it was not so.

Boring the light alloy cylinders for moped engines. Finished cylinders are stacked on the right



mopeds

Fantastic

The *Peugeot* mo-ped works at Beau-lieu-Mandeure is new, modern and still incomplete. With the cycle works at Valentigney and engine factory at St. Louis it is the production unit of the cycle and mo-ped company which is independent of the car and truck organisation at Souchaux.

Peugeot are unusual in the two-wheeler field in that they make nearly everything on the machines themselves; magnetos, frame tubes and plated cycle parts in the cycle factory, moped engines at St. Louis, and frames, wheels, transmissions and all the rest at Mandeure. Here also is the assembly line for the whole production, 900 mo-peds a day turned out with a leisurely-looking efficiency that is fantastic to watch.

In fact the same principles as are applied to the car factory are also the basis of mo-ped production, raw material goes in and is spread out over the various factories and departments in carefully calculated rates of flow so that the right quantities of components are being manufactured all the time for continuous assembly into complete machines.

All along the line meticulous testing maintains high standards as production proceeds. Magnetos built up from rolls of wire and insulating strip at one end of the shop are individually tested on completion at the other and poured out reassuringly fat blue sparks across quarter-inch gaps. Every fuel tank was plugged and fed with high pressure air in a water tank to test for leaks. Each individual clutch (automatic, of course,) was mounted on an electrically driven shaft to be checked for engagement and the variable pulley belt assemblies tested in the same way. The beautifully chromed bores of the light alloy

cylinders are gauged before and after plating and a blemish in the finish of an component sends it back before it ever reaches the assembly line.

The same strong impression of unhurried flexible organisation struck us most forcibly on seeing that the whole varied range of machines passed along the same lines at the same time. Tubed frames or pressed steel assemblies, single or variable speeds, rigid or spring suspensions all appeared to be at hand so that whatever model came along the line, the building went on uninterrupted. The Methods Department have organised so well that all working time is production time. We saw no batch work and no "stop and go" tactics in any department.

Modern plant

Naturally, economic production at this rate of flow calls for up-to-date machinery designed for the job. *Peugeot* even make their own tools so that the whole of a machine is designed as one piece and there is no problem of adapting their own design to fit the requirements of proprietary components. The press shop stamped out thousands of parts so accurately that they almost fell into position for welding and the multi-spot electric welders really finished each seam and spot without any need for manual follow-up.

France still buys a majority of the tubular frame models but we were most interested in the ultra-modern BB.104 machine that is likely to be their best seller in Britain.

This is built like a car, with large pressings forming its frame assembly with integral petrol tank and mud-guarding. The various components assemble into this body to form a single rigid unit ready to receive its engine, transmission and wheels. Compared with the conventional tubular frame this *monocoque* construction provides a very high strength/weight ratio, great rigidity and built-in weather protection. The finished article is good looking, easy to clean and service and very tough.

It does, however, call for something special in the way of finish and with *Peugeot* it gets just that. The paintshop is a factory in itself and as modern a piece of plant as could be found anywhere.



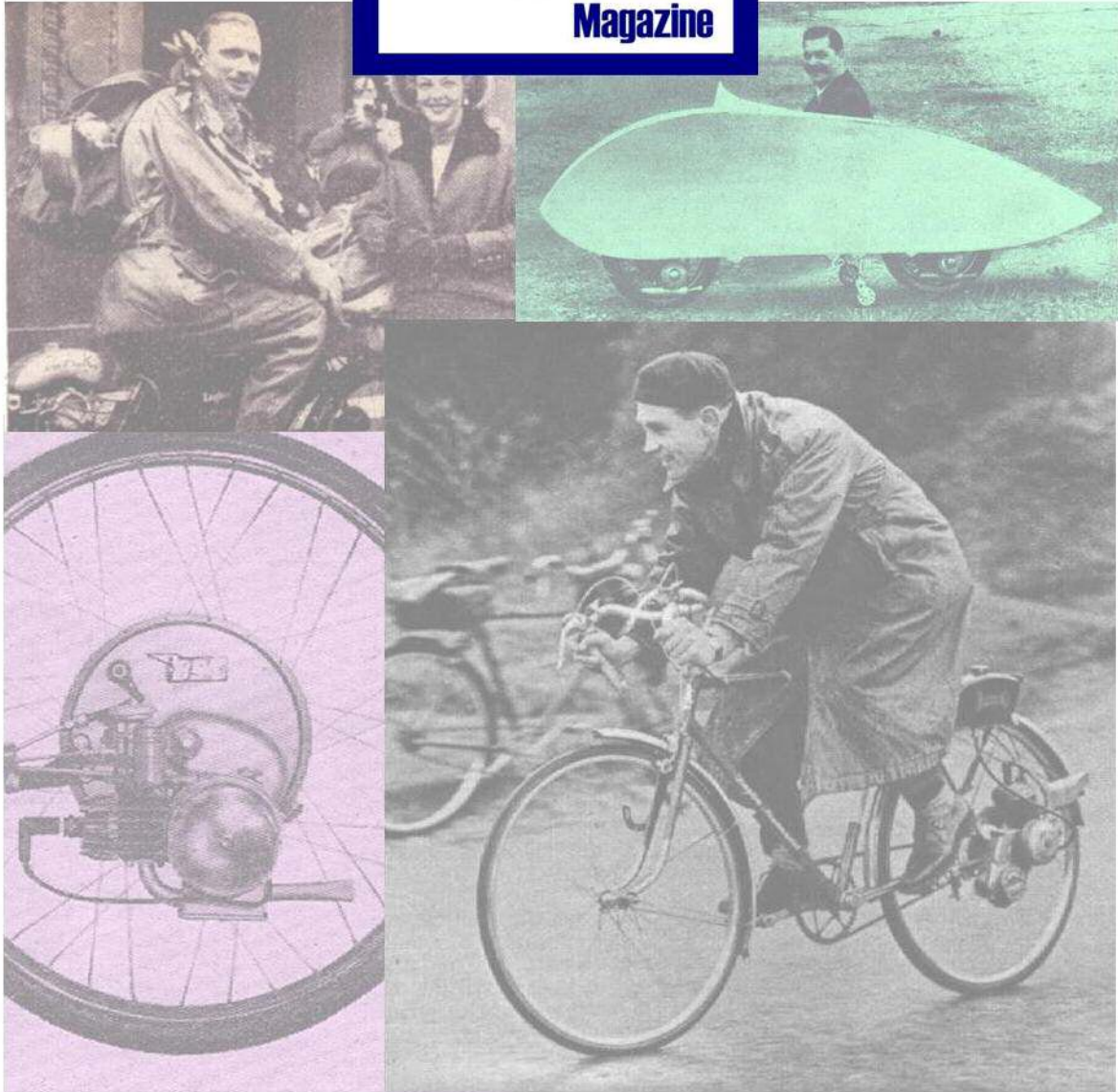
The editor (right), only scooter journalist on the trip, and M. H de Lassardiere, Export Sales Manager

All components are mounted on frames and pass along conveyors untouched by hand except for the inevitable and constant inspection. First chemical cleaning and degreasing, then priming, with great jets of paint gushing over the parts from various angles so that every crack and corner gets its share. Then comes the infra-red "cooking" followed by colour spraying and finally the super-hard transparent finish that will resist all fair wear and tear and a lot of misuse and abuse as well.

When those components meet up with the plated parts on the assembly lines one feels that this machine is about as well protected from its user and the elements as modern techniques can make it.

At the end if it all the machines roll off the lines on to test rigs to be started up, tuned and have controls set, then careful carton packing and loading, right there inside the factory, into specially fitted railway trucks. *Peugeot* have thought of everything.

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