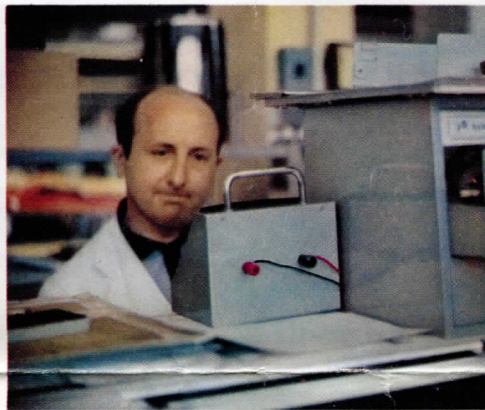


**If you have the idea
that it's a simple
bolt and screw job making
Rank Xerox equipment**



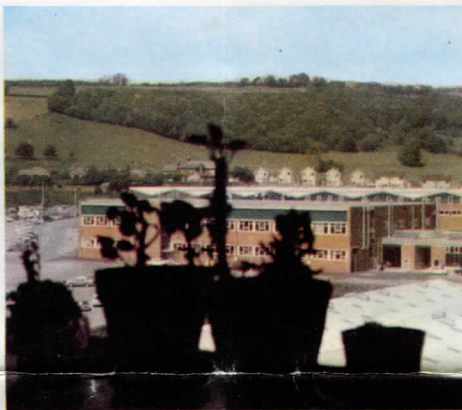
**Don't tell Dennis Cowmeadow,
he'll do his nut**

What it takes to make the Rank Xerox revolution in office efficiency.

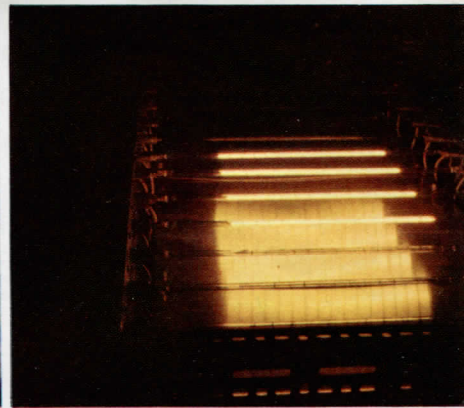
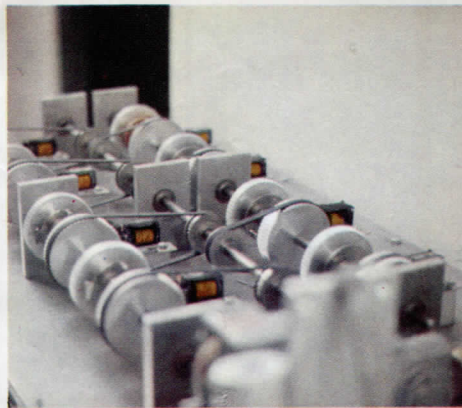
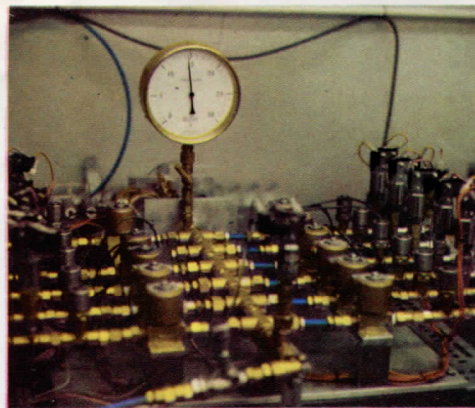
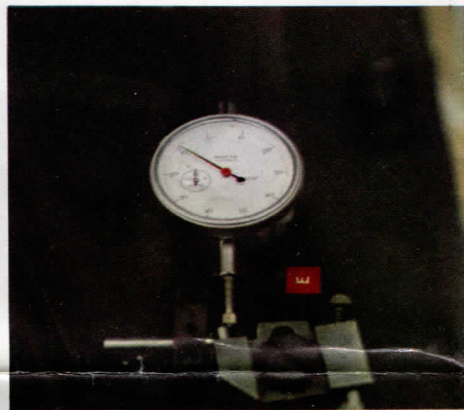
Dennis Cowmeadow works on the 3rd checking station on the Rank Xerox* production line. He examines the electrical assemblies after they have been checked at Station 2 where they check the checking done initially. Then Dennis sends them along to be checked. Sometimes he wishes he'd taken up diamond cutting . . . so he could relax on the job a bit.



In the heart of the Forest of Dean, Dennis Cowmeadow's country, deep in rural Gloucestershire, you'll find one of the most advanced engineering operations in Europe. It's the Rank Xerox factory at Mitcheldean.



Think of a word. At Rank Xerox, Mitcheldean, the word is precision. Every part, every step forward is measured, checked, measured. A plus or minus 0.0005" is common everyday practice.

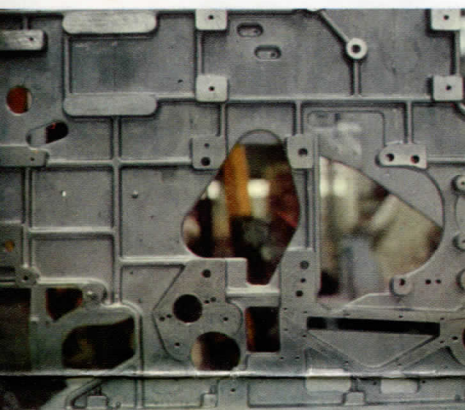


Rank Xerox copiers and copier-duplicators, like all sophisticated machines, use parts from outside suppliers. In order to ensure that these measure up to the highest Rank Xerox specifications, reliability tests are constantly run. Here, on test No. 1507B, the solenoid valves which control the release of copy paper from the selenium drum, heart of the xerographic process, are tested. So far they have made 13 million operations.

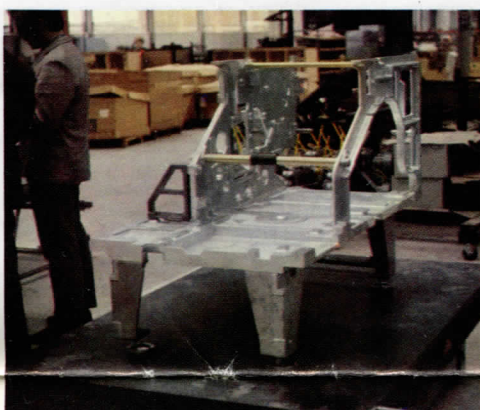
Reliability engineering, under the direction of Ken Boyd, is a vital part of the Rank Xerox operation. The aim is to increase the reliability of the machines by checking the reliability of every part in every system, like these drive wheels. Rank Xerox are amongst world leaders in this branch of engineering.

Amongst the hundred or so reliability tests on critical components being carried on at one time, is this test on heating elements of the 2400 fuser roller. This virtually incandescent component is buried in the roller which fuses the image to be copied on to the paper. Often, conclusions reached by Ken Boyd's department improve components in general industrial use.

This is the main chassis of the Rank Xerox 2400. Before a finished 2400 rolls off the production line, almost 4,500 parts are fitted, during an operation that takes only 14 hours. Vast investment in precision tooling, a colossal 750,000 man-hours spent tooling-up, and Rank Xerox expertise in production engineering, have all helped bring about this amazingly fast production cycle.



Before any optical or moving assemblies are mounted in the Rank Xerox 2400, the main frame assembly receives five banking checks to read within 0.0015" of each other.



This is a familiar scene in the Rank Xerox factory. Engineers and technicians consider a detail of the total operation. It may be trivial, it may never affect the operation of the machine. But then again it may, so it has to be put right.



This is the famous selenium-coated drum. The drum in the picture will now be used for machine testing only as it has been handled many times. A new and untouched drum is packed with each machine.

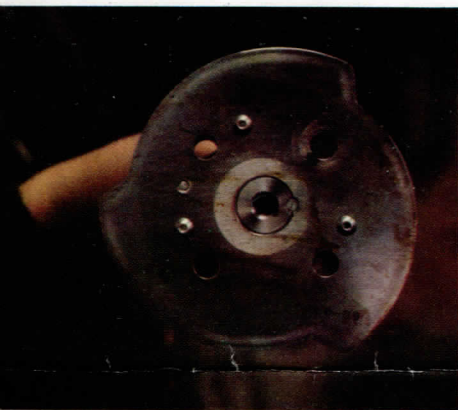


We appreciate eagerness like anyone else, but when you're engaged in precision engineering, care must come first.

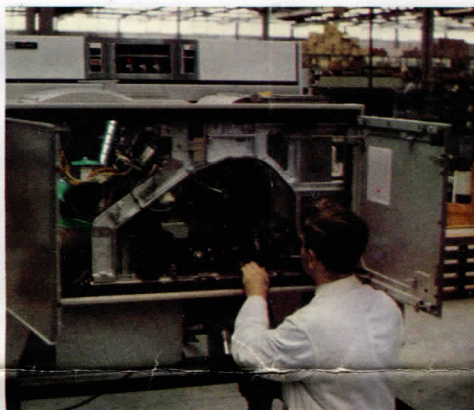


Even in the smallest machine we make, the Rank Xerox 330 desk-top copier-duplicator, there are 67 individual cables in the main wiring loom and many more on the various electrical components.

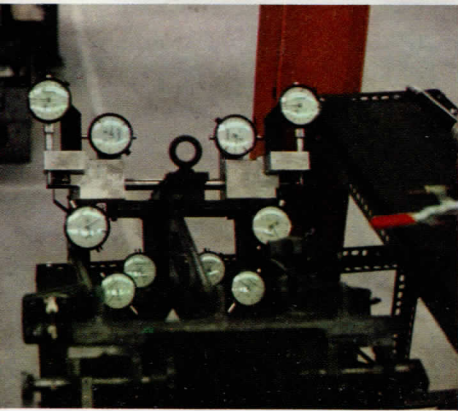
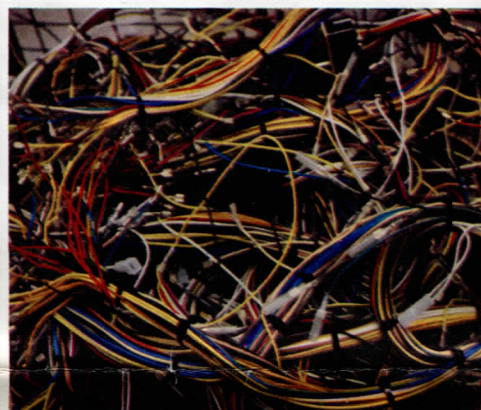
This cam controls the oscillating mirror which scans a document 40 times a minute in the 2400. To ensure a perfect image every time, the profile of the cam must be controlled to within 16 millionths of an inch per degree of rotation. Special techniques were developed to measure this cam.



When you are making equipment which has to have an accuracy comparable to a scientific instrument, and still stand regular day-in, day-out use, you can't operate with a wish and a prayer. All six major sub-assemblies on the 2400 have an in-line process audit, as well as a final sequence of tests which includes making 3,000 copies.



To get some idea of the electrical work that goes into a Rank Xerox copier or copier-duplicator, reflect on these few facts: there are 750 separate wires in the Rank Xerox 720, over 1,000 wires in the 2400, considerably more if you add the collator.



This device is setting the developer housing stops to a tolerance of 0.002": a degree of accuracy that can only be judged correct when the 11 dials simultaneously show a correct reading. This process ensures the correct positioning of the developer housing.



What's an Oscar doing in the Rank Xerox factory? It sits in the office of Mr. Stan Pratt, head of Engineering, who received an Academy Award for his work on colour film printing techniques. So when you see a colour film in the cinema it's likely to have been printed on equipment designed by him.

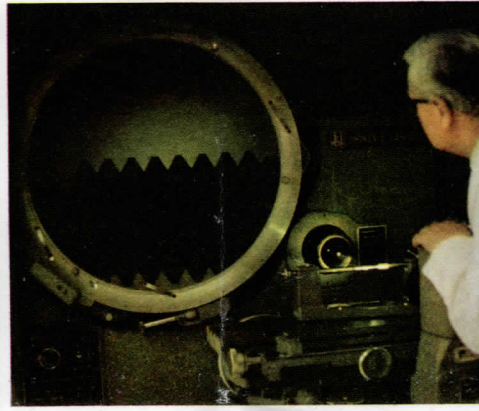
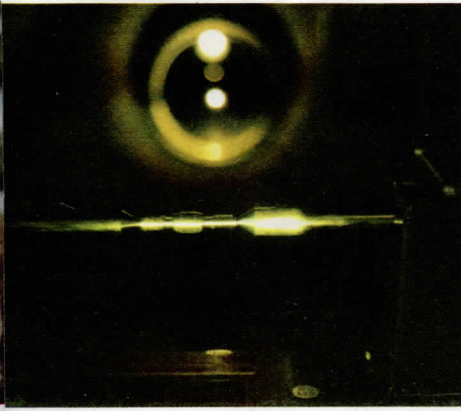
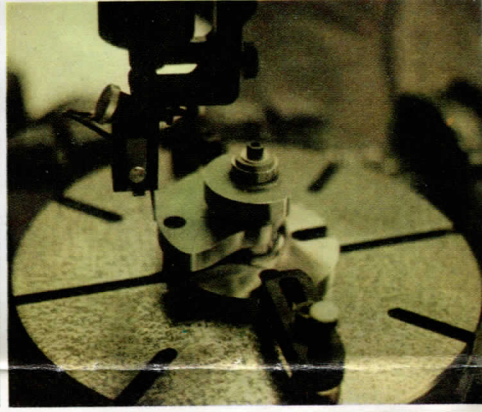
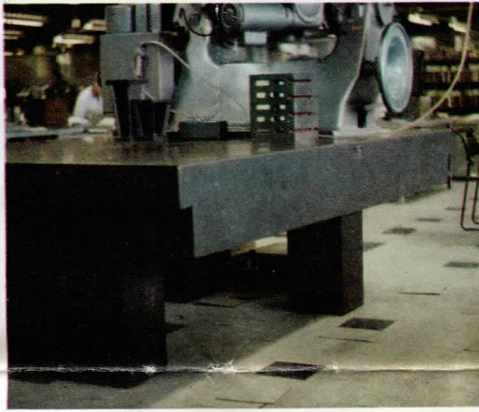
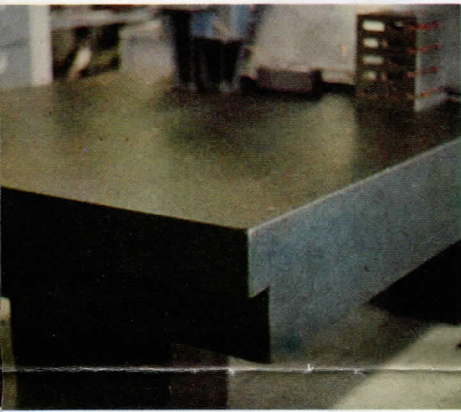


Finally, when the machines are made and tested and tested again, and again, until everyone is happy, they have to be despatched. From Mitcheldean, in Gloucestershire, Rank Xerox equipment goes to offices in Britain, Europe, Russia, Africa, Australia and Asia.

In order to check the instruments that check the machines, there's a Standards Room at Mitcheldean. In a dust-free, air-conditioned, 68°F., 40 per cent. humidity atmosphere, 400 precision instruments are checked monthly, often on this table of Californian granite, with a true plane within a thousandth of an inch over a length of 12 feet.

On the table there's another table, a one-ton rotary inclinable table, which can be moved around by air pressure, just like a hovercraft.

Critical tools and parts, like the 2400 paper-feeder cam, also come to the Standards Room, to be measured on the Moore Universal Measuring Machine, capable of accuracies of 10 millionths of an inch.



Amongst the highly advanced equipment in the Standards Room is a Jones and Lamson Optical Comparator and Measuring Machine. Here, in order to check its pitch, a screw-plug gauge of under one inch diameter is mounted in the path of a light beam.

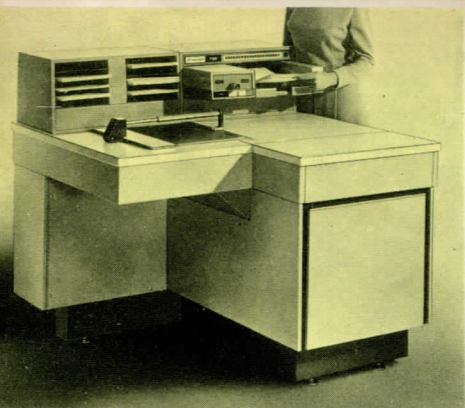
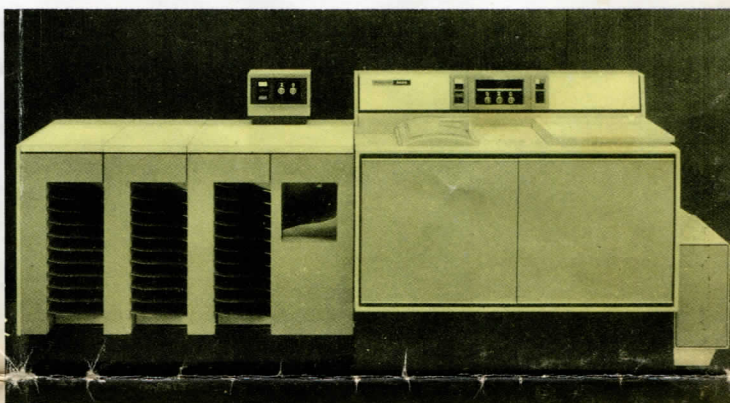
The image of the gauge, magnified to 50 times its size, is projected on the screen of the Optical Comparator so that the finest details of the thread can be examined and checked.

Every time a copy is made on a Rank Xerox machine the image of the original is reflected by a mirror on to the selenium drum. In order to check this mirror for absolute flatness an optical flat is used in a monochromatic light box. The pattern of lines shown up indicates the degree of flatness.

The 2400-IV. A computer forms duplicator—produces high-quality copies from continuous stationery print-out.

As many copies as required in a convenient size—at a speed of 40 copies per minute and on ordinary paper. Can reduce 15"×11" computer output to 11 $\frac{3}{4}$ "×8 $\frac{1}{4}$ " copies. Creates forms—applies headings and rulings through the use of overlays. Sorts and collates copies into finished reports with a sorter of 10 to 30 bins.

The 3600+Sorter. A perfect reproduction of any original every second . . . on ordinary paper. 3,600 an hour. Without a master. All impressions automatically sorted, 150 to a bin, with a total of fifty bins available. This is productivity!




The 720. To do both copying and duplicating work on one machine. Make forty, fifty prints, or just one. Direct from an original. 720 prints an hour with paper longer than 11 $\frac{3}{4}$ ". Plus a choice of one faster speed: 840, 870 or 960 prints per hour, according to the paper size.

The 660. Reducing cost-per-copy, push-button operation, no master or stencil needed. The 660 brings the productivity of duplicating right into your own office.

The future. Every year, new developments, like the machines on this page, make documentary communications faster, simpler, more convenient and economic. The progress will go on. Already we're looking ahead to next year's BEE, and the year after. This is not a company to stand still.

Now come and see what Dennis Cowmeadow and his Mitcheldean work-mates have produced this year. Come and see the Rank Xerox range, including all the new machines, on Stands 17/28 and 36/49, at the Business Efficiency Exhibition.

 **RANK XEROX**
LIMITED
A DIVISION WITHIN THE RANK ORGANISATION
JOINTLY OWNED WITH XEROX CORPORATION

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