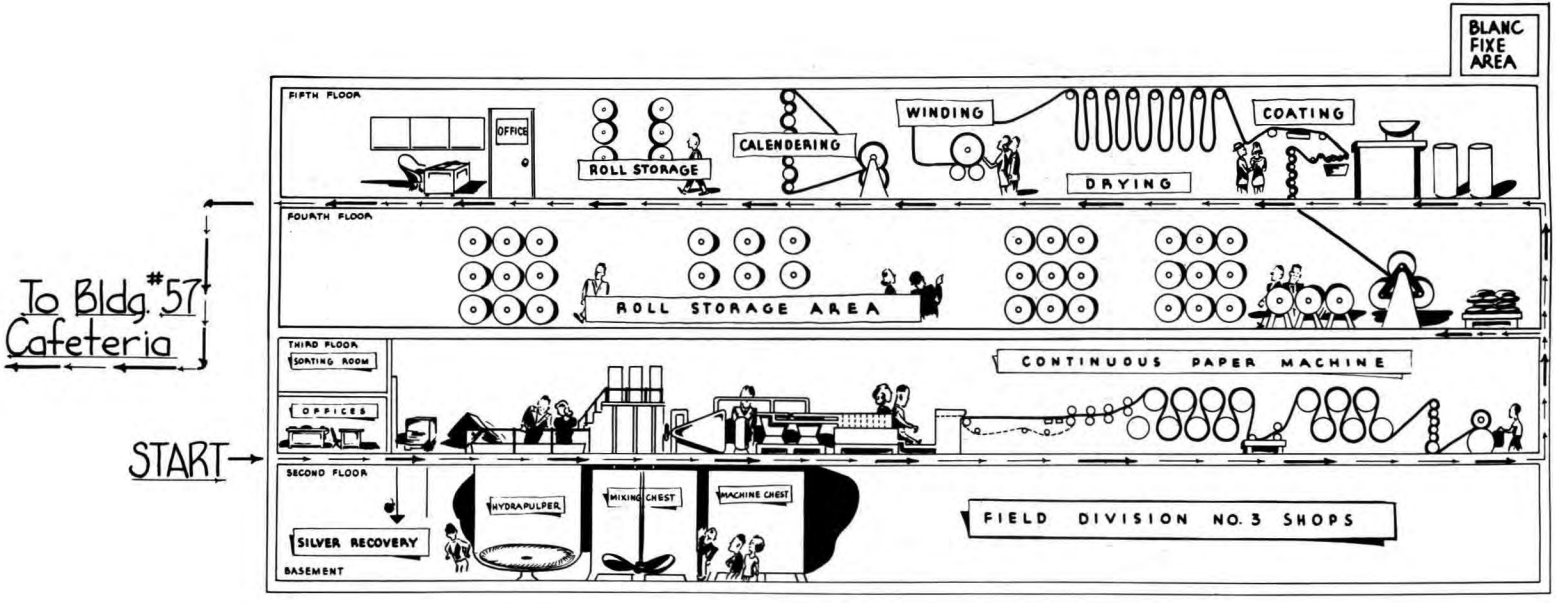
WELCOME

to the Open House of

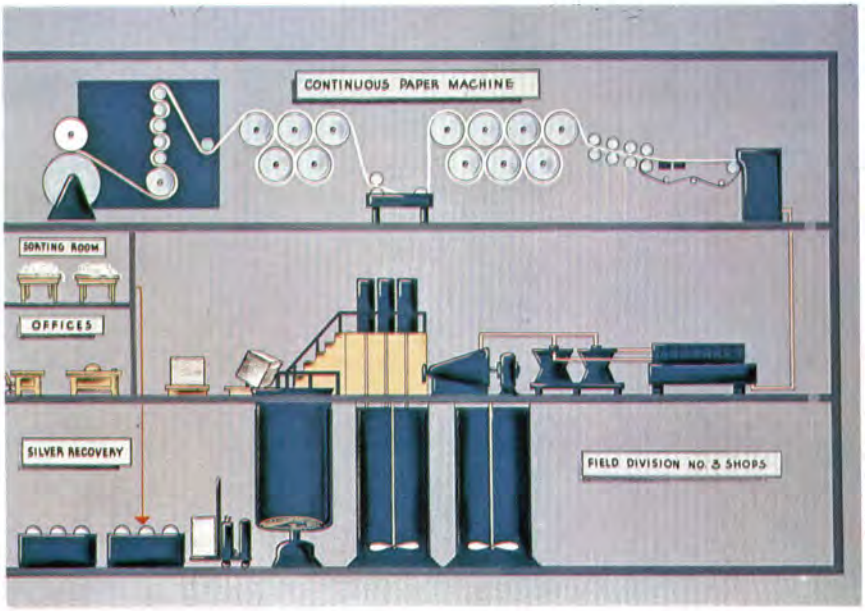
THE PAPER MILLS AND BARYTA DIVISIONS

of Eastman Kodak Company



TOUR ROUTE

Follow the Arrows On Your Open House Visit

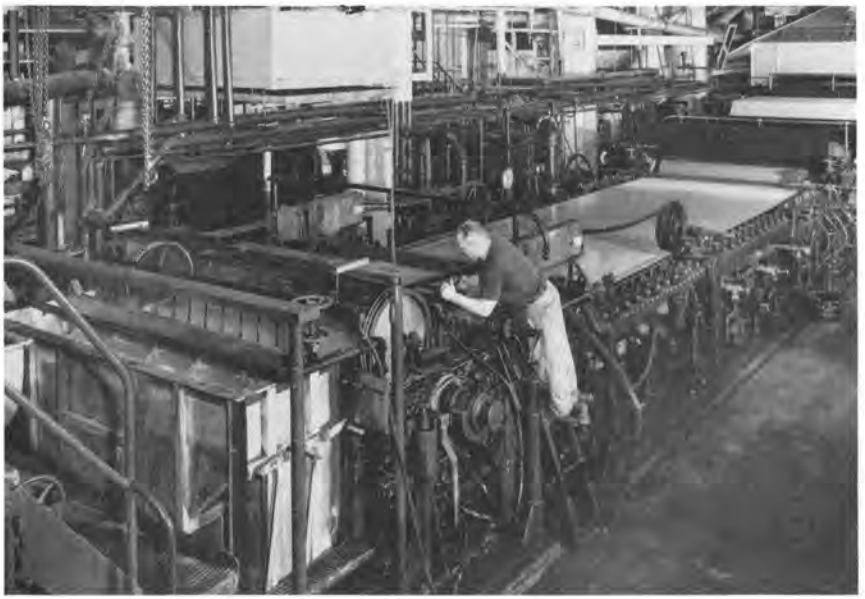


Photographic Paper Making at Kodak Park

• This simple diagram and the one on the opposite page show some of the steps in making paper for photographic use. But these diagrams can't, of course, illustrate the infinite care, the rigorous quality control, needed to turn out a top-flight product. We hope your visit will give you some idea of that.

George Eastman early recognized that the Company would have to operate its own paper mills to assure a dependable source of fine paper. The first paper mill, Building 50, started operations in 1919. Every year, thousands of miles of paper, unsurpassed for its permanence and uniformity, come off the huge paper-making machines of Building 50.

Special wrapping papers, with equally fine characteristics, are produced in Building 62. These papers are used for wrapping photographic films, papers and plates.



The Paper Machine in Building 62

• Strong, light-tight wrapping papers are produced by this 100″ wide machine. The equipment and operations are quite similar to those in Building 50 where photographic papers are made.

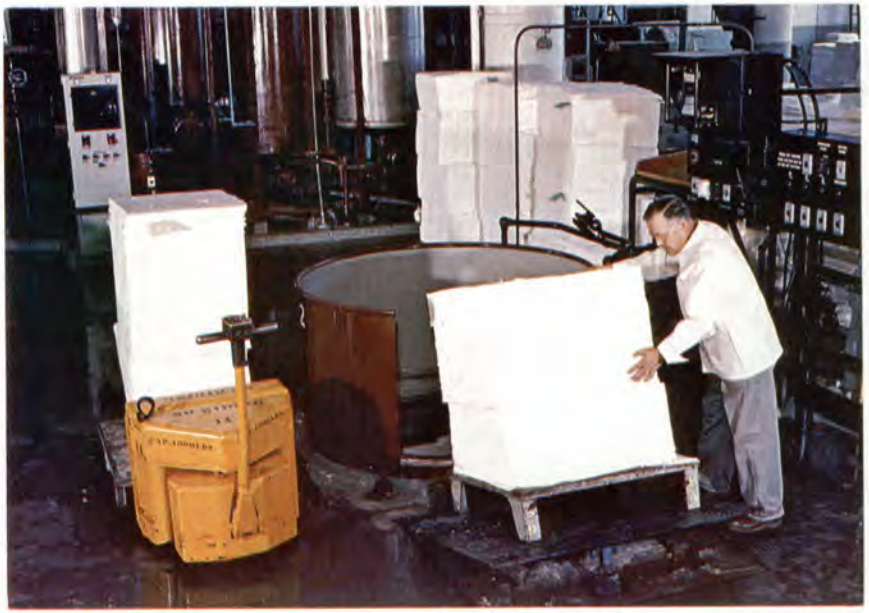
Here, paper-making stock and enormous quantities of water form a paper "web" on an endless wire screen belt. As the water drains away, the pulp fibers intermesh, and you can see the paper sheet form and continue on through pressing and drying operations.

Into his product the machine tender must build the special characteristics of texture, finish, appearance, and strength. His job requires long experience and sound judgment.

Beating Paper Stock in Building 62

• The "paper stock" is shown here being prepared by the beaterman. Precise amounts of the various pulps required are broken up in water by a knife-studded revolving roll under the arched cover at the right. The fibers then circulate between this roll and a group of opposing knives in the floor of the beater.

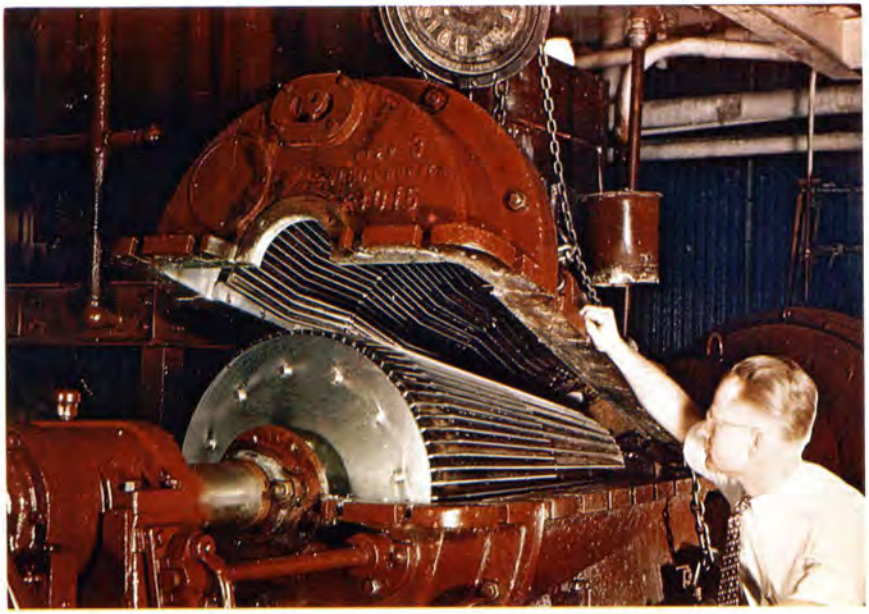
By certain adjustments, the beaterman achieves the degree of beating which will give the required strength to the finished paper. The addition of special sizing chemicals and dyes at this point provides water resistance, printing quality, strength, and appearance to the final paper product.



Charging a Hydrapulper in Building 50

• The actual manufacture of photographic paper in Building 50 starts here. High-grade pulp goes down the chute to be broken up with water in a tile-lined hydrapulper below the operating floor.

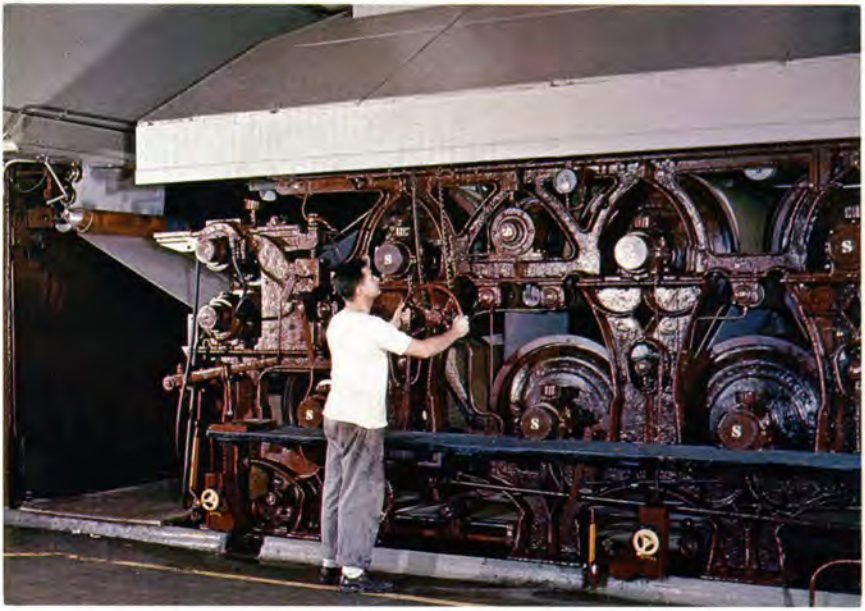
The operator selects the blend of pulps specified for the paper machine for which the batch is intended. He then meters the exact amount of water needed to dilute the pulp. Later, he will pump the thoroughly defibered stock to a tile-lined mixing chest where chemicals and dyes from the tanks shown in the background are added. This improves the water resistance, color, and strength of the final photographic paper.



A Jordan Opened to Show its Knife Blades

• The next step is a noisy one. The scream of the Jordan Refiner is caused by the rapid turning of a knife-studded plug, cutting the paper stock. This picture shows the inside of the Jordan and the arrangement of the knives.

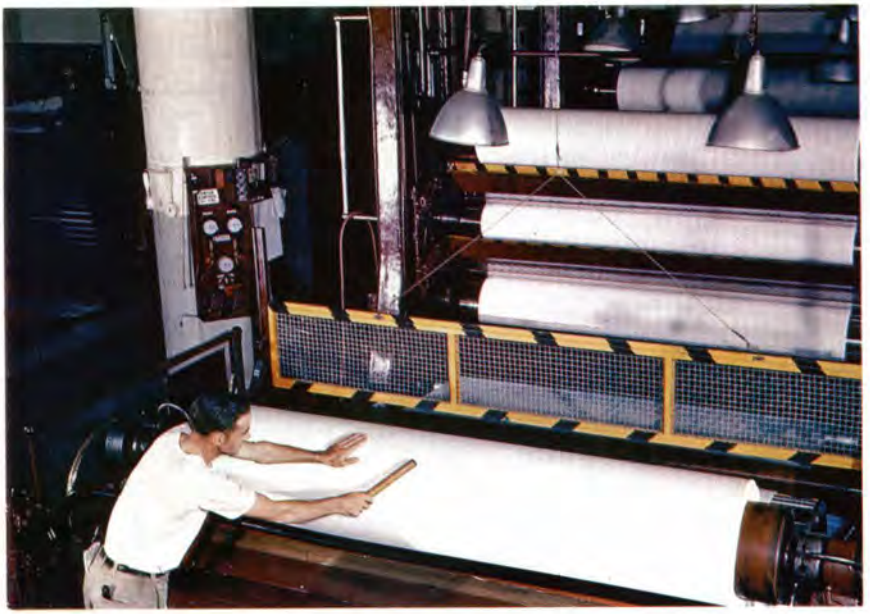
The machine tender adjusts the cutting action to produce desired paper-making qualities in the paper stock as it is pumped through the Jordan on its way to the paper machine.



Drying Section of a Building 50 Paper Machine

• The paper web is more than half water when it enters the first of several heated drier sections on the paper machine. Drier felts press the fragile sheet against a series of steam-heated drums. These drying drums are chromium plated and highly polished to prevent contamination of the damp sheet.

This operator, known as the back tender is responsible for operation of the machine from the drying sections to the finishing end of the machine. There is so much shrinkage as the sheet travels along that it would tear apart if he did not control the speed of each section to compensate for it. As a result, each section is driven at a slightly different speed than its neighbor.



The Calender and Reel Section of the Machine

• The paper's journey through the paper-making machine ends here. Heavily-weighted steel rollers compress and smooth the paper to uniform thickness. This calendering operation prepares the surface of the sheet for later coatings in the Baryta Division.

By minute adjustments of the calender controls, the back tender builds a level roll of finished paper as it is wound into convenient lengths on reels such as that shown in the foreground.

Winding and Inspecting Finished Paper

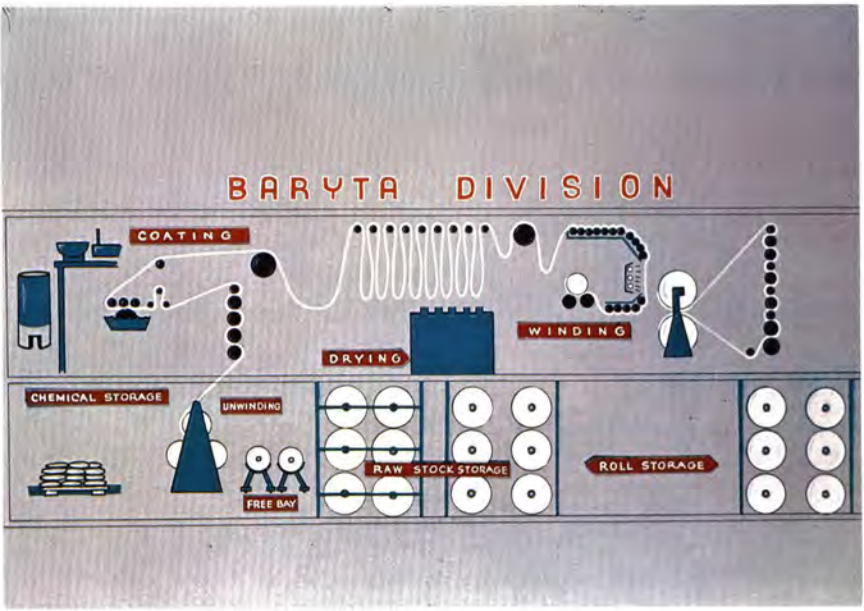
• Before leaving the Paper Mills, all paper, whether photographic or wrapping, is rewound, trimmed to proper width, and carefully inspected for removal of any defects. These windermen enforce quality standards that assure delivery of a uniformly high-grade product to subsequent departments. Each roll is held in storage until detailed physical, chemical, and photographic tests have been made.

After approval by the Paper Service Division laboratories, following these tests, most of the raw photographic paper is sent to the Baryta Division for surface coating. This is done before the light-sensitive emulsion is added.

Behind the Scenes

• For every man in the group of paper makers whose work you have just seen there are at least two more people in the team that work "behind the scenes." Included in this latter group are the handlers who deliver raw materials from stock rooms to the production areas and a maintenance and cleaning force to keep production equipment clean. There are product and process testers who check all steps in the paper production cycle to insure uniformity and freedom from contamination. A fiber recovery group sorts over damaged or defective product prior to salvage operations that reduce waste losses to a minimum. A laboratory and development staff works on paper making problems, and finally, a clerical and office force keeps the records, analyzes costs of operations and schedules new production.

Only with the enthusiastic and efficient help of all these people, with their special abilities, knowledge or experience, is it possible to turn out the volume and quality of paper produced each year by the Kodak Paper Mills. Each of these people can be justifiably proud of his part in maintaining these mills as the world's largest producer of fine papers for photographic use.



The Baryta Division

• The paper you have seen coming off the paper-making machines isn't yet ready for its light-sensitive emulsion. Its surface needs to be brightened and tinted to meet a multitude of customer requirements. This is done by coating the paper with baryta.

The Baryta Division was started in 1900 because the coating of the papers then imported from Europe was not of a sufficiently high quality.

Differences both in the Baryta coating and in the sensitive emulsions added later account for the wide variety of photographic papers we offer our customers.

Since our last Open House in 1949, the Baryta operations and equipment have been improved in many ways. A major change you may have noticed is the larger roll size—three times what it used to be.

Unwind Stand Area

• Since we started using the larger size rolls, the raw paper has been stored on the fourth floor of Building 50. It is delivered from there to the unwind room by the raw stock handlers.

Here you see the paper as it is drawn from the rolls directly to the coating machines on the floor above. When a roll is fully unwound, its end is spliced to the next roll, and the coating process continues without interruption.

Blanc Fixe Plant

• Preparation of the coating material calls for great care.

The Baryta is first washed on the sixth floor, which at the present time is being completely rebuilt.

Mixing Room

• Here, the blanc fixe is mixed with gelatine, dyes, and other materials to produce the coating solution. The mixing operation calls for great precision to ensure the correct properties in the finished solution.

Pumps are now used to transport the blanc fixe from the storage tanks to the mixing kettles. This has improved the accuracy of measurement, and eliminated the laborious method of handling this material with buckets.

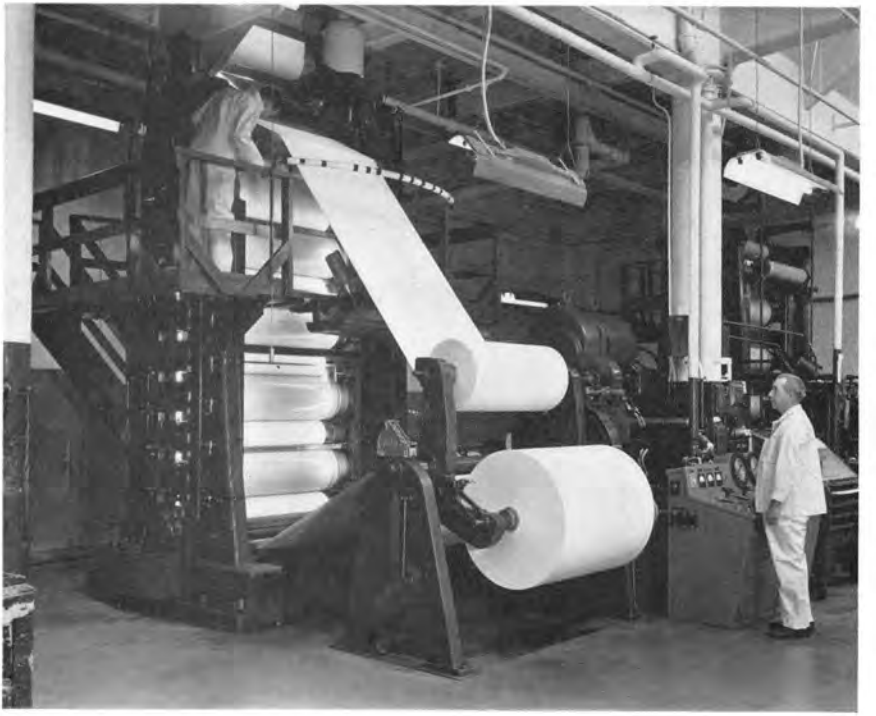
When thoroughly mixed, the solution is pumped to the mezzanine platform where it is stored for delivery to the coating machines through pipes.

Coating, Drying, and Winding

• The coating machines spread the baryta mixture onto the raw paper. Automatic controls keep the amount of coating even as the paper moves through this process. The wet sheet is then looped into festoons and dried by heated air.

The operator must control the coating very carefully because almost a mile of paper can be coated before it is inspected at the winder after drying.

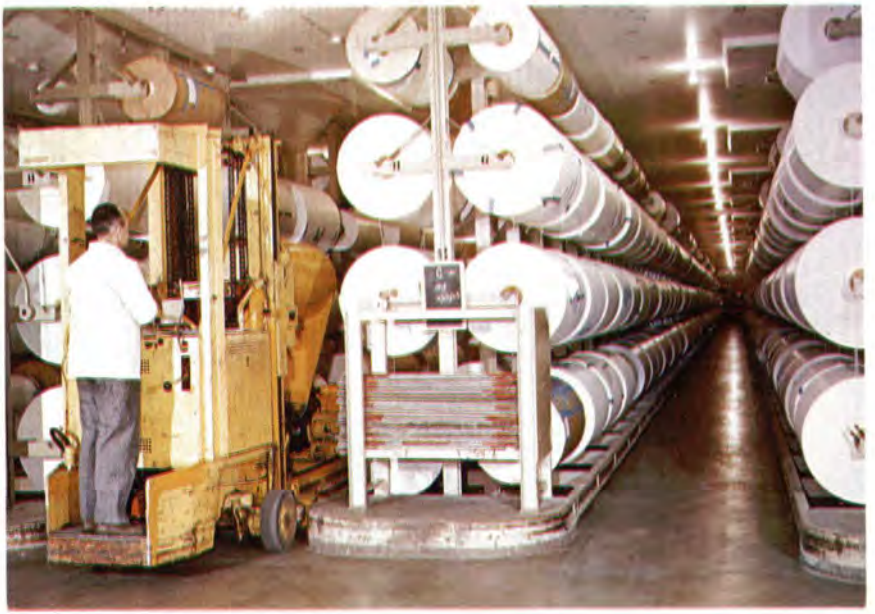
Here, you see the coated and conditioned paper being taken up by the winding machine. The winding machine operator cuts out any sections of paper which appear to be defective.



The Calender Stack

• The surface of the paper is influenced by the calendering operation which follows.

A calender stack, such as the one shown here, passes the paper back and forth through rollers. Depending on the amount of pressure applied, a dull or glossy surface results. This high-speed calender stack is controlled by the operator from the panel board at his side.



Storage of the Coated Stock

• After the finishing operation, the baryta coated paper is hung in rolls on the fifth floor and in basement storage areas in Building 57. It is kept here while being tested and before it is given its light-sensitive emulsion.

As you can see from this picture of the fifth floor storage, vertical racks and a special truck make the heavy rolls easily accessible. This is important because the rolls may be sampled here several times.

Some Rolls go Traveling

• Not all the paper we make and coat stays at Kodak Park for sensitizing, cutting, and packaging. We send some of it to Kodak companies in other countries and we sell some to commercial customers.

Such paper must be rewound and examined to make sure that it meets the quality specifications of the customer. It must also be cut into smaller rolls for shipment.

Here you see the rewinding operation. Following this, the paper is packed for shipment. Packing is an important job because the paper must be properly protected to reach the customer in good condition.

• We hope the operations of our Baryta Division have been interesting to you. Here, as with the Paper Mills, a great deal of staff and office work backs up the production operations. Quality and waste control laboratories make sure that the baryta coated paper meets the high standards so essential for photographic paper base. An efficient maintenance and cleaning group insures continuous machine operation and freedom from contamination and defective material. Our clerical and office people handle the complicated job of scheduling production, and they keep the records required for manufacturing control. Manufacturing development work is carried on as a constant effort to bring even higher quality standards to future production.

We're pleased that you came to see us and our work. We take a good deal of pride in what we do and in showing these operations to you. Perhaps your visit has given you a hint of the care, the effort, and the pride that lie behind Kodak's reputation for fine products.