



## *A New Life for Zeiss*

By Max Eastman



WHEREVER men look through lenses, from cameras to telescopes, the name Zeiss is a symbol of technical skill. Few know that it is also a symbol of selfless devotion to the welfare of man. For back of Zeiss was a remarkable scientist-sociologist named Ernst Abbe.

Had Ernst Abbe not been so modest, his name would be well known throughout the world. One of the great minds and great hearts of modern history, he established precise laws by which the movement of light rays through the lenses of a microscope could be determined mathematically. His microscopes made possible the work of men like Robert Koch and Louis Pasteur. He invented a dozen other optical instruments vital to modern science and helped to build a company which manufactured them in such fastidious perfection, and in such quantities, that it has never had a rival. And to administer this, he set up a

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*An industrial story with a surprising—  
and gratifying—ending*

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foundation so far ahead of the laws and customs of the day as to constitute almost a social revolution. To it Abbe gave the name of his friend and co-worker, Carl Zeiss.

Zeiss was a small, whiskered, highly skilled mechanic who repaired laboratory instruments for the University of Jena in old Germany. He established a workshop in 1846 and made microscopes of the simple kind then in use, but he had a hunch that infinitely better ones could be made. When Ernst Abbe came to Jena to teach physics and astronomy, Zeiss recognized that Abbe was a genius. "The shop is yours," he said in effect. "Let's have a real microscope!"

It took Abbe four years to find the mathematical formulae upon which modern microscopes are cre-

ated. But the glass did not exist with which to make one. Abbe induced Otto Schott, a glass chemist, to come to Jena to work with him. Together they developed an "optical glass" which did things with light rays that had never been done before. Then, with Carl Zeiss and his son, they formed a manufacturing company.

Zeiss's little workshop began to turn out optical instruments in increasing quantity. In 12 years, from 1876 to 1888, the number of employes rose from 42 to 300. By 1938 the Zeiss plant employed 10,000 persons and occupied 25 acres. It turned out many important new inventions every year, and shipped optical equipment all over the world — everything from binoculars and camera lenses to planetariums and complete astronomical observatories. It was one of the supreme institutions of prewar Germany.

But that is only half the story. Almost every family in Jena participated in the manufacture of the lenses, and when the plant began to prosper, it troubled Abbe to be getting rich while many of his friends continued poor. They worked just as hard as he did to produce the instruments. Why shouldn't they have their share of the reward?

When Carl Zeiss died in 1888, Abbe bought out Zeiss's son and became the sole owner of the Zeiss Works. Then, renouncing his ownership, he deeded the whole establishment to a foundation which he named for his deceased friend.

All those who contributed to the

enterprise — employes, the community, the university, related branches of science and technology — were to have a share of the profits. The administering authority was the Department of Education which had charge of the University of Jena. But this authority was guided by a set of statutes which Abbe drew up after two years' study in sociology and law.

Paid vacations, sick benefits, eight-hour day, severance pay, invalid and old-age pensions for workers and their families, representation in management — all these were embodied in Abbe's statutes long before the world at large seriously considered them. The foundation promoted companies that built, but could not own or control, homes for the workers. The statutes also decreed there should be no discrimination on grounds of race, religion, politics or mode of domestic life.\*

That an experiment in production on these principles should prove so successful in world competition has been regarded as a finding comparable in importance to those Abbe made in optics. In recognition of his contribution to social philosophy, Ernst Abbe was made a Doctor of Laws by the University of Jena.

Ernst Abbe died in 1905. He was buried, according to his will, without speeches and in the presence of his family only. Thousands of workers who flocked to the cemetery

\* Under the Nazi regime the latter clause had to be changed on paper, but the management adhered to it.

to do him honor stopped outside the gate, obedient to his last request.

Abbe's statutes were still in force when General Patton's Third Army entered Jena in April 1945. Within two months the gigantic Zeiss Works, damaged by bombings, were ready to resume production. In June the U. S. High Command, in accordance with agreements made at Yalta, withdrew Patton's troops, and the Red Army moved in. Within a year the Russians had removed \$100,000,000 worth of goods and machinery from the factories; 336 technicians and skilled workers were deported to the Soviet Union.

The workers left in Jena undertook to revive the factory with what little machinery remained in the denuded buildings. Then, just as the wheels were beginning to turn, the plant was taken over by the Soviet-dominated East German Government. That ended the bodily existence of Ernst Abbe's triumphant creation.

But wait — in a somewhat mysterious way, the spirit had already escaped from the body. In June 1945, a bare three days before the Red Army moved in, a convoy of U. S. Army trucks had pulled into Jena. With the help of top Zeiss executives, the outstanding scientists and technicians of the Zeiss factories with their families were transplanted 200 miles southwest to an old barrack in the village of Heidenheim in the U. S. Zone. These 130 men were the spirit and the brain of the Zeiss Foundation,

Without them no one could possibly revive the body — in Moscow or Jena.

On scraps of paper in a vacant room in a cigar factory they went to work remembering, planning, calculating, designing. They leased an abandoned war plant in a valley ten miles from Heidenheim and prepared to install a new factory to be called Zeiss Opton. There was no talk of salaries. They had brought a few million depreciated reichsmarks with them, out of which each man received a living allowance depending on the size of his family. They had a few machines which had been dispersed — by good luck in the West — to escape bombing during the war. Beyond that they had nothing but their minds and memories.

I asked the production director, Dr. Heinz Kuppenbender, what machinery they installed first. "Beds!" he said. "There were no buses, and not enough bicycles for us all to ride the 20 miles back and forth from Heidenheim."

This brilliant inventor-director, author among other things of the Contax camera, had the job of scouring the countryside for food. He relates how, having bought a dozen live pigs on the black market, he solved the problem of turning them into pork without announcing it to the entire neighborhood. He organized a Beethoven concert on the top floor while the pigs were slaughtered in the basement.

Today the valley is buzzing with activity. Two new factory buildings

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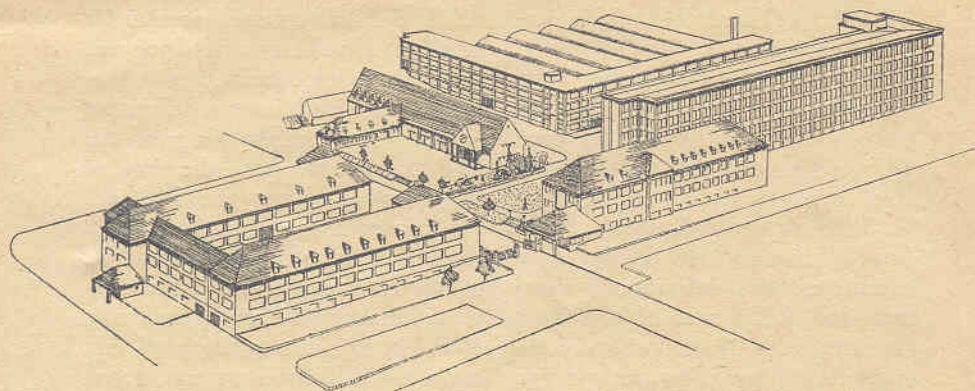
are completed, and a third — with the help of ECA — is halfway up. Fifteen thousand square feet of floor space are crowded with busy machines tended by 2500 workers — about half of whom had slipped over the border from Jena. The hillsides are dotted with model dwellings, promoted but not owned by the firm. Zeiss Opton is again turning out unparalleled optical equipment. At a recent ophthalmological congress in London, Zeiss Opton carried off the honors as of old.

"We adopted one rule in rebuilding the Zeiss factory," Herr Henrichs, the commercial director, said. "Everything we do here must be better than it was at Jena. The old

Zeiss tradition of perfection has been re-established here in the Western Zone, and everyone who buys a Zeiss product now wants to know where it comes from, and whether it is a Zeiss Opton."

And the statutes set up by Ernst Abbe?

"Except for the financial parts, they are still in force," Henrichs told me. "The currency reform of 1948 compelled us to make a bank loan — the only time that ever happened since Zeiss opened the little workshop in 1846. Our first obligation is to pay off that loan and become again our own masters. Once we are independent, Abbe's statutes will be reinstated completely."



The new Zeiss-Opton factory

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