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THE

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see p 46
XEROX



P R O F I L E S

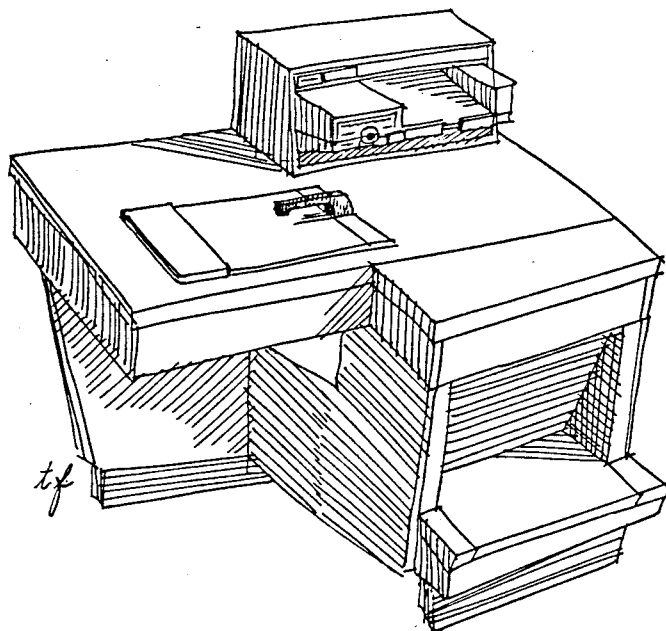
XEROX XEROX XEROX XEROX

WHEN the original mimeograph machine—the first mechanical duplicator of written pages that was practical for office use—was put on the market by the A. B. Dick Company, of Chicago, in 1887, it did not take the country by storm. On the contrary, Mr. Dick—a former lumberman who had become bored with copying his price lists by hand, had tried to invent a duplicating machine himself, and had finally obtained rights to produce the mimeograph from its inventor, Thomas Alva Edison—found himself faced with a formidable marketing problem. “People didn’t want to make lots of copies of office documents,” says his grandson C. Matthews Dick, Jr., currently a vice-president of the A. B. Dick Company, which now manufactures a whole line of office copiers and duplicators, including mimeograph machines. “By and large, the first users of the thing were non-business organizations like churches, schools, and Boy Scout troops. To attract companies and professional men, Grandfather and his associates had to undertake an enormous missionary effort. Office duplicating by machine was a new and unsettling idea that upset long-established office patterns. In 1887, after all, the typewriter had been on the market only a little over a decade and wasn’t yet in widespread use, and neither was carbon paper. If a businessman or a lawyer wanted five copies of a document, he’d have a clerk make five copies—by hand. People would say to Grandfather, ‘Why should I want to have a lot of copies of this and that lying around? Nothing but clutter in the office, a temptation to prying eyes, and a waste of good paper.’”

On another level, the troubles that the elder Mr. Dick encountered were perhaps connected with the generally bad repute that the notion of making copies of graphic material had been held in for a number of centuries—a bad repute reflected in the various overtones of the English noun and verb “copy.” The Oxford English Dictionary makes it clear that during those centuries there was an aura of deceit associated with the word; indeed, from the late six-

teenth century until Victorian times “copy” and “counterfeit” were nearly synonymous. (By the middle of the seventeenth century, the medieval use of the noun “copy” in the robust sense of “plenty” or “abundance” had faded out, leaving behind nothing but its adjective form, “copious.”) “The only good copies are those which exhibit the defects of bad originals,” La Rochefoucauld wrote in his “Maxims” in 1665. “Never buy a copy of a picture,” Ruskin pronounced dogmatically in 1857, warning not against chicanery but against debasement. And the copying of written documents was often suspect, too. “Though the attested Copy of a Record be good proof, yet the Copy of a Copy never so well attested . . . will not be admitted as proof in Judicature,” John Locke wrote in 1690. At about the same time, the printing trade contributed to the language the suggestive expression “foul copy,” and it was a favorite Victorian habit to call one object, or person, a pale copy of another.

Practical necessity arising out of increasing industrialization was doubtless chiefly responsible for a twentieth-century reversal of these attitudes. In any case, office reproduction began to grow very rapidly. (It may seem paradoxical that this growth coincided with the rise of the telephone, but perhaps it isn’t. All the evidence suggests that communication between people by whatever means, far from simply accomplishing its purpose, invariably breeds the need for more.) The typewriter and car-



bon paper came into common use after 1890, and mimeographing became a standard office procedure soon after 1900. “No office is complete without an Edison Mimeograph,” the Dick Company felt able to boast in 1903. By that time, there were already about a hundred and fifty thousand of the devices in use; by 1910 there were probably over two hundred thousand, and by 1940 almost half a million. The offset printing press—a mettlesome competitor capable of producing work much handsomer than mimeographed output—was successfully adapted for office use in the nineteen-thirties

and forties, and is now standard equipment in most large offices. As with the mimeograph machine, though, a special master page must be prepared before reproduction can start—a relatively expensive and time-consuming process—so the offset press is economically useful only when a substantial number of copies are wanted. In office-equipment jargon, the offset press and the mimeograph are “duplicators” rather than “copiers,” the dividing line between duplicating and copying being generally drawn somewhere between ten and twenty copies. Where technology lagged longest was in the development of efficient and economical copiers. Various photographic devices that did not require the making of master pages—of which the most famous was (and still is) the Photostat—began appearing around 1910, but because of their high cost, slowness, and difficulty of operation, their usefulness was largely limited to the copying of architectural and engineering drawings and legal documents. Until less than two decades ago, the only practical machine for making a copy of a business letter or a page of typescript was a typewriter with carbon paper in its platen.

The nineteen-fifties were the raw, pioneering years of mechanized office copying. Within a short time, there suddenly appeared on the market a whole batch of devices capable of reproducing most office papers without the use of a master page, at a cost of only a few cents per copy, and within

a time span of a minute or less per copy. Their technology varied—Minnesota Mining & Manufacturing's Thermo-Fax, introduced in 1950, used heat-sensitive copying paper; American Photocopy's Dial-A-Matic Autostat (1952) was based on a refinement of ordinary photography; Eastman Kodak's Verifax (1953) used a method called dye transfer; and so on—but almost all of them, unlike Mr. Dick's mimeograph, immediately found a ready market, partly because they filled a genuine need and partly, it now seems clear, because they and their function exercised a powerful psychological fascination on their users. In a society that sociologists are forever characterizing as "mass," the notion of making one-of-a-kind things into many-of-a-kind things showed signs of becoming a real compulsion. However, all these pioneer copying machines had serious and frustrating inherent defects; for example, Autostat and Verifax were hard to operate and turned out damp copies that had to be dried, while Thermo-Fax copies tended to darken when exposed to too much heat, and all three could make copies only on special treated paper supplied by the manufacturer. What was needed for the compulsion to flower into a mania was a technological breakthrough, and the breakthrough came at the turn of the decade with the advent of a machine that worked on a new principle, known as xerography, and was able to make dry, good-quality, permanent copies on ordinary paper with a minimum of trouble. The effect was immediate. Largely as a result of xerography, the estimated number of copies (as opposed to duplicates) made annually in the United States sprang from some twenty million in the mid-fifties to nine and a half *billion* in 1964, and to fourteen billion in 1966—not to mention billions more in Europe, Asia, and Latin America. More than that, the attitude of educators toward printed textbooks and of business people toward written communication underwent a discernible change; avant-garde philosophers took to hailing xerography as a revolution comparable in importance to the invention of the wheel;

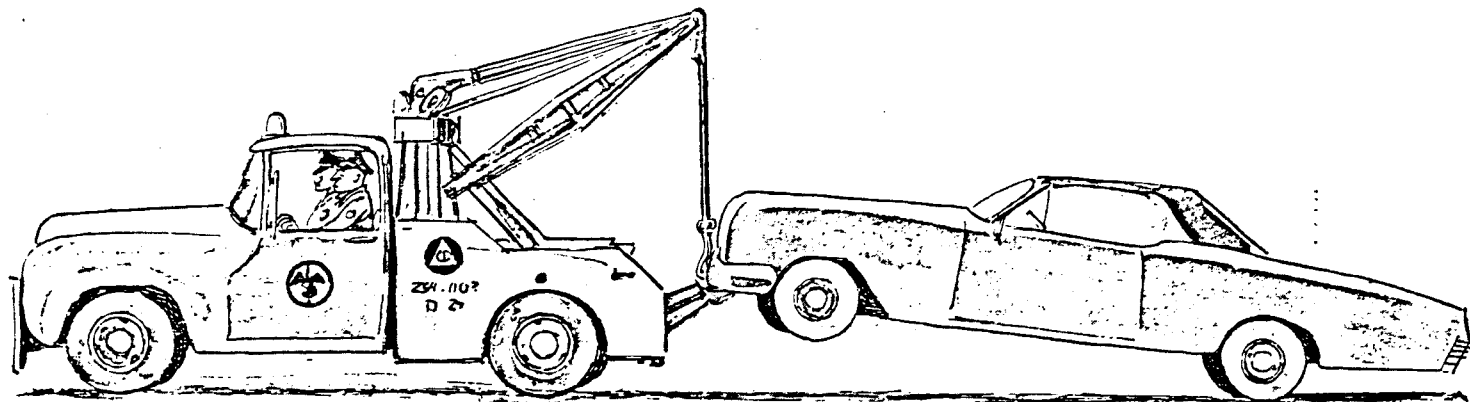
and coin-operated copying machines began turning up in candy stores and beauty parlors. The mania—not as immediately disrupting as the tulip mania in seventeenth-century Holland but probably destined to be considerably farther-reaching—was in full swing.

THE company responsible for the great breakthrough and the one on whose machines the majority of these billions of copies were made was, of course, the Xerox Corporation, of Rochester, New York. As a result, it became the most spectacular big-business success of the nineteen-sixties. In 1959, the year the company—then called Haloid Xerox, Inc.—introduced

its first automatic xerographic office copier, its sales were thirty-three million dollars. In 1961, they were sixty-six million, in 1963 a hundred and seventy-six million, and in 1966 over half a billion. As Joseph C. Wilson, the chief executive of the firm, recently pointed out, its growth rate in late years has been such that if it should be maintained for a couple of decades (which, perhaps fortunately for everyone, can't possibly happen), Xerox sales would be larger than the present gross national product of the United States. Unplaced in *Fortune's* ranking of the five hundred largest American industrial companies in 1961, Xerox by 1964 had attained two-hundred-



"... and I feel I owe my victory to hard training, to the loyal devotion of my manager and my wife, and to an intangible something that for lack of a better word I shall call heart."



and-twenty-seventh place, and by 1965 it had climbed to hundred-and-seventy-first. *Fortune's* ranking is based on annual sales; according to certain other criteria, Xerox places much higher than hundred-and-seventy-first. For example, early in 1966 it ranked about sixty-third in the country in net profits, probably ninth in ratio of profit to sales, and about fifteenth in terms of the market value of its stock—and in this last respect the young upstart was ahead of such long-established industrial giants as U.S. Steel, Chrysler, Procter & Gamble, and R.C.A. Indeed, the enthusiasm the investing public has shown for Xerox has made its shares the stock-market Golconda of the current decade. Anyone who bought its stock toward the end of 1959 and held on to it ever since would find his holding now worth about sixty-six times its original price, and anyone who was really foresighted and bought Haloid in 1955 would have seen his original investment grow—one might almost say miraculously—a hundred and eighty times. Not surprisingly, a covey of "Xerox millionaires" has grown up—several hundred of them all told, most of whom either live in the Rochester area or came from there.

The Haloid Company, started in Rochester in 1906, was the grandfather of Xerox, just as one of its founders—Joseph C. Wilson, a sometime pawnbroker and sometime mayor of Rochester—was the grandfather of his namesake, the present boss of Xerox. Haloid manufactured photographic papers, and, like all photographic companies—and especially those in Rochester—it lived in the giant shadow of its neighbor, Eastman Kodak. Even in this subdued light, though, it was effective enough to weather the Depression in modestly good shape. In the years immediately after the Second World War, however, both competition and labor costs increased, sending Haloid on a search for new products. One of the possibilities its scientists hit upon

was a copying process that was being worked on at the Battelle Memorial Institute, a large non-profit industrial-research organization in Columbus, Ohio. At this point, the story flashes back to 1938 and a second-floor kitchen above a bar in Astoria, Queens, which was being used as a makeshift laboratory by an obscure thirty-two-year-old inventor named Chester F. Carlson. The son of a barber of Swedish extraction, and a graduate in physics of the California Institute of Technology, Carlson was employed in New York in the patent department of P. R. Mallory & Co., an Indianapolis manufacturer of electrical and electronic components; in quest of fame, fortune, and independence, he was devoting his spare time to trying to invent an office copying machine, and to help him in this endeavor he had hired Otto Kornei, a German refugee physicist. The fruit of the two men's experiments was a process by which, on October 22, 1938, after using a good deal of clumsy equipment and producing considerable smoke and stench, they were able to transfer from one piece of paper to another the unheroic message "10-22-38 Astoria." The process, which Carlson called electrophotography, had—and has—five basic steps: sensitizing a photoconductive surface to light by giving it an electrostatic charge (for example, by rubbing it with fur); exposing this surface to a written page to form an electrostatic image; developing the latent image by dusting the surface with a powder that will adhere only to the charged areas; transferring the image to some sort of paper; and fixing the image by the application of heat. The steps, each of them in itself familiar enough in connection with other technologies, were utterly new in combination—so new, in fact, that the kings and captains of commerce were markedly slow to recognize the potentialities of the process. Applying the knowledge he had picked up in his job downtown,

Carlson immediately wove a complicated net of patents around the invention (Kornei shortly left to take a job elsewhere, and thus vanished permanently from the electrophotographic scene) and set about trying to peddle it. Over the next five years, while continuing to work for Mallory, he pursued his moonlighting in a new form, offering rights to the process to every important office-equipment company in the country, only to be turned down every time. Finally, in 1944, Carlson persuaded Battelle Memorial Institute to undertake further development work on his process in exchange for three-quarters of any royalties that might accrue from its sale or license.

Here the flashback ends and xerography, as such, comes into being. By 1946, Battelle's work on the Carlson process had come to the attention of various people at Haloid, among them the younger Joseph C. Wilson, who was about to assume the presidency of the company. Wilson communicated his interest to a new friend of his—Sol M. Linowitz, a bright and vigorously public-spirited young lawyer, recently back from service in the Navy, who was then busy organizing a new Rochester radio station that would air liberal views as a counterbalance to the conservative views of the Gannett newspapers. Although Haloid had its own lawyers, Wilson, impressed with Linowitz, asked him to look into the Battelle thing as a "one-shot" job for the company. "We went to Columbus to see a piece of metal rubbed with cat's fur," Linowitz has since said. Out of that trip and others came an agreement giving Haloid rights to the Carlson process in exchange for royalties to Carlson and Battelle, and committing it to share with Battelle in the work and the costs of development. Everything else, it seemed, flowed from that agreement. In 1948, in search of a new name for the Carlson process, a Battelle man got together with a professor of classical languages at Ohio State University, and



by combining two words from classical Greek they came up with "xerography," or "dry writing." Meanwhile, small teams of scientists at Battelle and Haloid, struggling to develop the process, were encountering baffling and unexpected technical problems one after another; at one point, indeed, the Haloid people became so discouraged that they considered selling most of their xerography rights to International Business Machines. But the deal was finally called off, and as the research went on and the bills for it mounted, Haloid's commitment to the process gradually became a do-or-die affair. In 1955, a new agreement was drawn up, under which Haloid took over full title to the Carlson patents and the full cost of the development project, in payment for which it issued huge bundles of Haloid shares to Battelle, which, in turn, issued a bundle or two to Carlson. The cost was staggering. Between 1947 and 1960, Haloid spent about seventy-five million dollars on research in xerography, or about twice what it earned from its regular operations during that period; the balance was raised through borrowing and through the wholesale issuance of common stock to anyone who was kind, reckless, or prescient enough to take it. The University of Rochester, partly out of interest in a struggling local industry, bought an enormous quantity for its endowment fund at a price that today, because of stock splits, amounts to fifty cents a share. "Please don't be mad at us if we find we have to sell our Haloid stock in a couple of years to cut our losses on it," a university official nervously warned Wilson. Wilson promised not to be mad. Meanwhile, he and other executives of the company took most of their pay in the form of stock, and some of them went as far as to put up their savings and the mortgages on their houses to help the cause along. (Prominent among the executives by this time was Linowitz, whose association with Haloid had turned out to be anything but

a one-shot thing; instead, he became Wilson's right-hand man, taking charge of the company's crucial patent arrangements, organizing and guiding its international affiliations, and eventually serving for a time as chairman of its board of directors.) In 1958, after prayerful consideration, the company's name was changed to Haloid Xerox, even though no xerographic product of major importance was yet on the market. The trademark "XeroX" had been adopted by Haloid several years earlier—a shameless imitation of Eastman's "Kodak," as Wilson has admitted. The terminal "X" soon had to be downgraded to lower case, because it was found that nobody would bother to capitalize it, but the near-palindrome, at least as irresistible as Eastman's, remained. XeroX or Xerox, the trademark, Wilson has said, was adopted and retained against the vehement advice of many of the firm's consultants, who feared that the public would find it unpronounceable, or would think it denoted an anti-freeze, or would be put in mind of a word highly discouraging to financial ears—"zero."

Then, in 1960, the explosion came, and suddenly everything was reversed. Instead of worrying about whether its trade name would be successful, the company was worrying about its becoming *too* successful, for the new verb "to xerox" began to appear so frequently in conversation and in print that the company's proprietary rights in the name were threatened, and it had to embark on an elaborate campaign against such usage. (In 1961, the company went the whole hog and changed its name to plain Xerox Corporation.) And instead of worrying about the future of themselves and their families, the Xerox executives were worrying about their reputation with the friends and relatives whom they had prudently advised *not* to invest in the stock at twenty cents a share. In a word, everybody who held Xerox stock in quantity had got rich or richer—the executives who had scrimped and sacrificed, the University of Rochester, Battelle Memorial Institute, and even, of all people, Chester F. Carlson, who had come out of the various agreements with Xerox stock that at recent prices is thought to be worth between forty and fifty million dollars, and now lives in baronial retirement not far from Rochester.

THUS baldly outlined, the story of Xerox to date has an old-fashioned, even a nineteenth-century, ring—the lonely inventor in his crude

laboratory, the small, family-oriented company, the initial setbacks, the reliance on the patent system, the resort to classical Greek for a trade name, the eventual triumph gloriously vindicating the free-enterprise system. But there is another dimension to Xerox. In the matter of demonstrating a sense of responsibility to society as a whole, rather than just to its stockholders, employees, and customers, it has shown itself to be the reverse of most nineteenth-century companies—to be, indeed, in the advance guard of twentieth-century companies. "To set high goals, to have almost unattainable aspirations, to imbue people with the belief that they can be achieved—these are as important as the balance sheet, perhaps more so," Wilson said a while back, and other Xerox executives have often gone out of their way to emphasize that "the Xerox spirit" is not so much a means to an end as a matter of emphasizing "human values" for their own sake. Such platform rhetoric is far from uncommon in big-business circles, of course, and when it comes from Xerox executives it is just as apt to arouse skepticism—or even, considering the company's huge profits, irritation. But there is evidence that Xerox means what it says. In 1965, the company donated \$1,632,548 to educational and charitable institutions, and \$2,246,000 in 1966; both years the biggest recipients were the University of Rochester and the Rochester Community Chest, and in each case the sum represented around one and a half per cent of the company's net income before taxes. This is markedly higher than the percentage that most large companies set aside for good works; to take a couple of examples from among those often cited for their liberality, R.C.A.'s contributions for 1965 amounted to about seven-tenths of one per cent of pre-tax income, and American Telephone & Telegraph's to considerably less than one per cent. That Xerox intends to persist in its high-minded ways is indicated by its having recently committed itself to the "one-per-cent program," often called the Cleveland Plan—a system inaugurated in that city under which local industries agree to give one per cent of pre-tax income annually to local educational institutions, apart from their other donations—so that if Xerox income continues to soar, the University of Rochester and its sister institutions in the area can face the future with a certain assurance.

In other matters, too, Xerox has taken risks for reasons that have noth-

ing to do with profit. In a 1964 speech, Wilson said, "The corporation cannot refuse to take a stand on public issues of major concern"—a piece of business heresy if there ever was one, since taking a stand on a public issue is the obvious way of alienating customers and potential customers who take the opposite stand. The chief public stand that Xerox has taken is in favor of the United Nations—and, by implication, against its detractors. Early in 1964, the company decided to spend four million dollars—a year's advertising budget—on underwriting a series of network-television programs dealing with the U.N., the programs to be unaccompanied by commercials or any other identification of Xerox apart from a statement at the beginning and end of each that Xerox had paid for it. That July and August—some three months after the decision had been announced—Xerox suddenly received an avalanche of letters opposing the project and urging the company to abandon it. Numbering almost fifteen thousand, the letters ranged in tone from sweet reasonableness to strident and emotional denunciation. Many of them asserted that the U.N. was an instrument for depriving Americans of their Constitutional rights, that its charter had been written in part by American Communists, and that it was constantly being used to further Communist objectives, and a few letters, from company presidents, bluntly threatened to remove the Xerox machines from their offices unless the series was cancelled. Only a handful of the letter writers mentioned the John Birch Society, and none identified themselves as members of it, but circumstantial

evidence suggested that the avalanche represented a carefully planned Birch campaign. For one thing, a recent Birch Society publication had urged that members write to Xerox to protest the U.N. series, pointing out that a flood of letters had succeeded in persuading a major airline to remove the U.N. insignia from its airplanes. Further evidence of a systematic campaign turned up when an analysis, made at Xerox's instigation, showed that the fifteen

thousand letters had been written by only about four thousand persons. In any event, the Xerox officers and directors declined to be persuaded or intimidated; the U.N. series appeared on the American Broadcasting Company network in 1965, to plaudits all around. Wilson has since maintained that the series—and the decision to ignore the protest against it—made Xerox many more friends than enemies. In all his public statements on the subject, he has insisted on characterizing what many observers consider a rather rare stroke of business idealism, as simply sound business judgment.

In the fall of 1966, Xerox began encountering a measure of adversity for the first time since its introduction of xerography. By that time, there were more than forty companies in the office copier business, many of them producing xerographic devices under license from Xerox. (The only important part of its technology for which Xerox has so far refused to grant a license is a selenium drum that enables its own machines to make copies on ordinary paper. All competing products still require treated paper.) The great advantage that Xerox had been enjoying was the one that the first to enter a new field always enjoys—the advantage of charging high prices. Now, as *Barron's* pointed out in August, it appeared that "this once-fabulous invention may—as all technological advances inevitably must—soon evolve into an accepted commonplace." Cut-rate latecomers were swarming into copying; one company, in a letter sent to its stockholders in May, foresaw a time when a copier selling for ten or twenty dollars could be marketed "as a toy," and there was even talk of the day when copiers would be given



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away to promote sales of paper, the way razors are given away now to promote razor blades. For some years, realizing that its cozy little monopoly would eventually pass into the public domain, Xerox had been widening its interests through mergers with companies in other fields, mainly publishing and education; for example, in 1962 it had bought University Microfilms, a library on microfilm of unpublished manuscripts, out-of-print books, doctoral dissertations, periodicals, and newspapers, and in 1965 it had tacked on two other companies—American Education Publications, the country's largest publisher of educational periodicals for primary- and secondary-school students, and Basic Systems, a manufacturer of teaching machines. But these moves failed to reassure that dogmatic critic the marketplace, and Xerox stock ran into a spell of heavy weather. Between late last June, when it stood at 267¾, and early October, when it dipped to 131⅝, the market value of the company was more than cut in half. In the single business week of October 3rd through October 7th, Xerox dropped 42½ points, and on one particularly alarming day—October 6th—trading in Xerox on the New York Stock Exchange had to be suspended for five hours because there were about twenty-five million dollars' worth of shares on sale that no one wanted to buy.

I FIND that companies are inclined to be at their most interesting when they are undergoing a little misfortune, and therefore I chose last fall as the time to have a look at Xerox and its people—something I'd had in mind to do for a year or so. I started out by getting acquainted with one of its products. The Xerox line of copiers and related items is by now a comprehensive one. There is, for instance, the 914, a desk-size machine that makes black-and-white copies of almost any page—printed, handwritten, typed, or drawn, but not exceeding nine by fourteen inches in size—at a rate of about one copy every six seconds; the 813, a much smaller device, which can stand on top of a desk and is essentially a miniaturized version of the 914 (or, as Xerox technicians like to say, "a 914 with the air left out"); the 2400, a high-speed reproduction machine that looks like a modern kitchen stove and can cook up copies at a rate of forty a minute, or twenty-four hundred an hour; the Copyflo, which is capable of enlarging microfilmed pages into ordinary book-size pages and printing them; the LDX, by which documents can be

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transmitted over telephone wires, microwave radio, or coaxial cable; and the Telecopier, a non-xerographic device, designed and manufactured by Magnavox but sold by Xerox, which is a sort of junior version of the LDX and is especially interesting to a layman because it consists simply of a small box that, when attached to an ordinary telephone, permits the user to rapidly transmit a small picture (with a good deal of squeaking and clicking, to be sure) to anyone equipped with a telephone and a similar small box. Of all these, the 914, the first automatic xerographic product and the one that constituted the big breakthrough, is still much the most important both to Xerox and to its customers.

It has been suggested that the 914 is the most successful commercial product in history, but the statement cannot be authoritatively confirmed or denied, if only because Xerox does not publish precise revenue figures on it; the company does say, though, that in 1965 the 914 accounted for about sixty-two per cent of its total operating revenues, which works out to something over \$243,000,000. It can be bought for \$27,500, or it can be rented for twenty-five dollars monthly, plus at least forty-nine dollars' worth of copies at four cents each. These charges are deliberately set up to make renting more attractive than buying, because Xerox ultimately makes more money that way. The 914, which is painted beige and weighs six hundred and fifty pounds, looks a good deal like a modern L-shaped metal desk; the thing to be copied—a flat page, two pages of an open book, or even a small three-dimensional object like a watch or a medal—is placed face down on a glass window in the flat top surface, a button is pushed, and nine seconds later the copy pops into a tray where an "out" basket might be if the 914 actually were a desk. Technologically, the 914 is so complex (more complex, some Xerox salesmen insist, than an automobile) that it has an annoying tendency to go wrong, and consequently Xerox maintains a field staff of thousands of repairmen who are presumably ready to answer a call on short notice. The most common malfunction is a jamming of the supply of copy paper, which is rather picturesquely called a "mispuff," because each sheet of paper is raised into position to be inscribed by an interior puff of air, and the malfunction occurs when the puff goes wrong. A bad mispuff can occasionally put a piece of the paper in contact with hot parts, igniting it and causing an alarming



Suit shown: 55% Dacron® polyester/45% wool

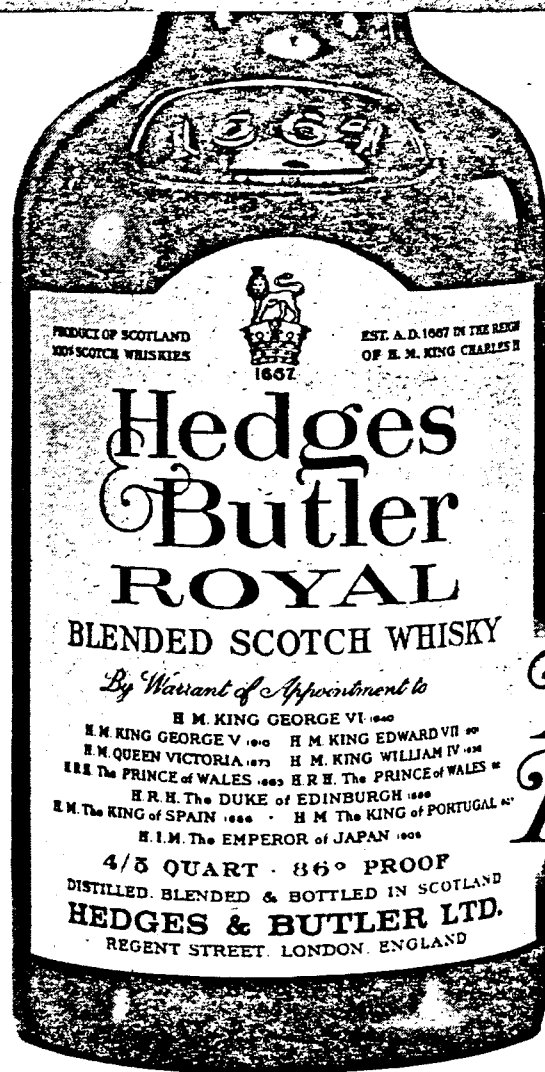
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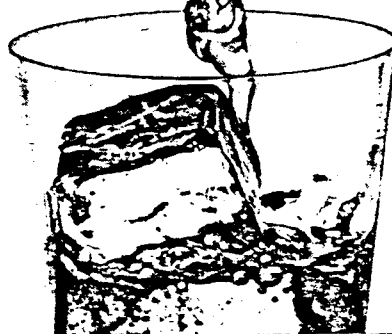
cloud of white smoke to issue from the machine; in such a case the operator is urged to do nothing, or, at most, to use a small fire extinguisher that is attached to it, since the fire burns itself out comparatively harmlessly if left alone, whereas a bucket of water thrown over a 914 may convey potentially lethal voltages to its metal surface. Apart from malfunctions, the machine requires a good deal of regular attention from its operator, who is almost invariably a woman. (The girls who operated the earliest typewriters were themselves called "typewriters," but fortunately nobody calls Xerox operators "xeroxes.") Its supply of copying paper and black electrostatic powder, called "toner," must be replenished regularly, while its most crucial part, the selenium drum, must be cleaned regularly with a special non-scratchy cotton, and waxed every so often. I spent a couple of afternoons with one 914 and its operator, and observed what seemed to be the closest relationship between a woman and a piece of office equipment that I had ever seen. A girl who uses a typewriter or switchboard has no interest in the equipment, because it holds no mystery, while one who operates a computer is bored with it, because it is utterly incomprehensible. But a 914 has distinct animal traits: it has to be fed and curried; it is intimidating but can be tamed; it is subject to unpredictable bursts of misbehavior; and, generally speaking, it responds in kind to its treatment. "I was frightened of it at first," the operator I watched told me. "The Xerox men say, 'If you're frightened of it, it won't work,' and that's pretty much right. It's a good scout; I'm fond of it now."

Xerox salesmen, I learned from talks with some of them, are forever trying to think of new uses for the company's copiers, but they have found again and again that the public is well ahead of them. One rather odd use of xerography insures that brides get the wedding presents they want. The prospective bride submits her list of preferred presents to a department store; the store sends the list to its bridal-registry counter, which is equipped with a Xerox copier; each friend of the bride, having been tactfully briefed in advance, comes to this counter and is issued a copy of the list, whereupon he does his shopping and then returns the copy with the purchased items checked off, so that the master list may be revised and thus ready for the next donor. ("Hymen, io Hymen, Hymen!") Again, police departments in New Orleans and various other places, in-



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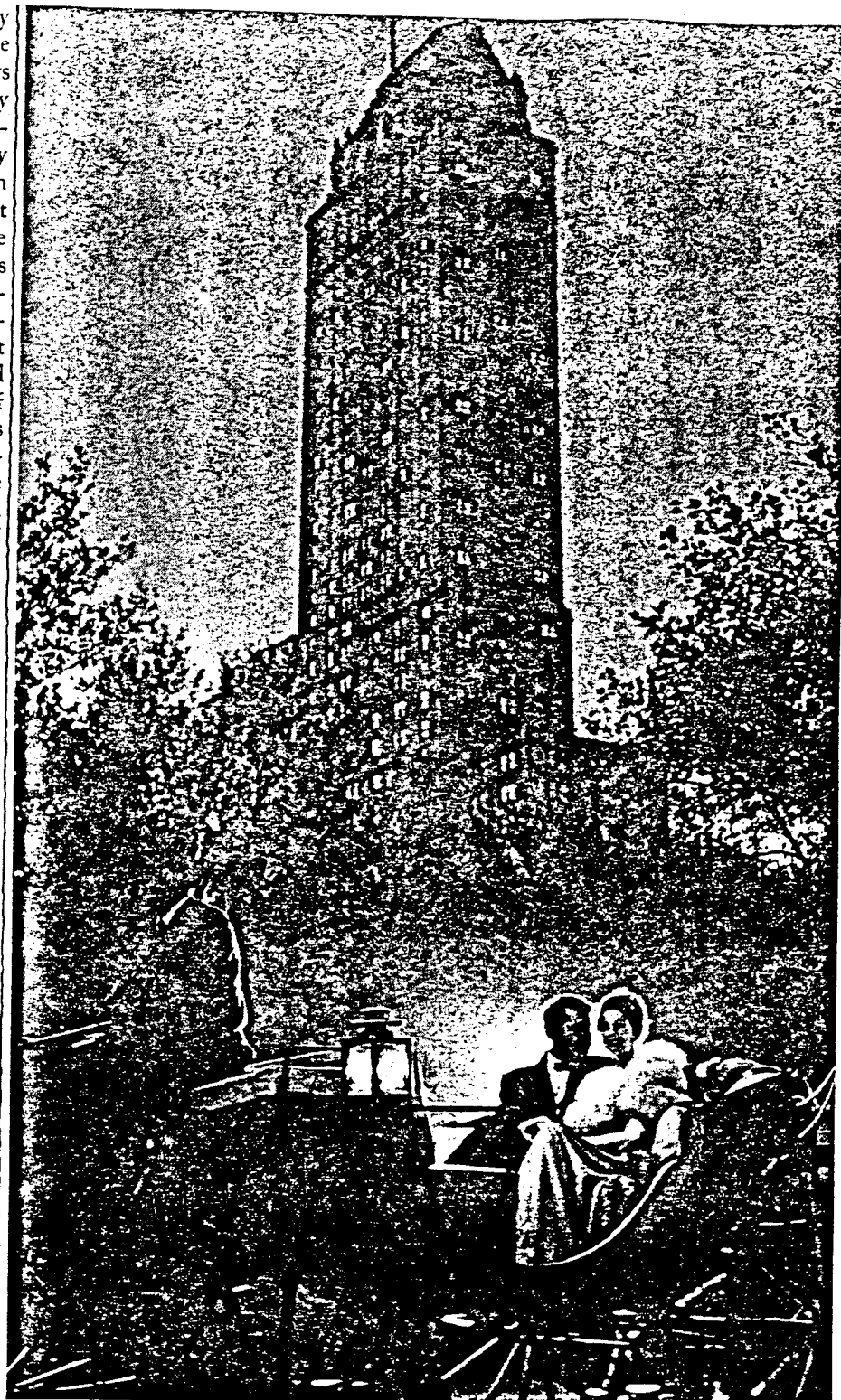
stead of laboriously typing up a receipt for the property removed from people who spend the night in the lockup, now place the property itself—wallet, watch, keys, and such—on the scanning glass of a 914, and in a few seconds have a sort of pictographic receipt. Hospitals use xerography to copy electrocardiograms and laboratory reports, and brokerage firms to get hot tips to customers more quickly. In fact, anybody with any sort of idea that might be advanced by copying can go to one of the many cigar or stationery stores that have a coin-operated copier and indulge himself. (It is interesting to note that Xerox produces coin-operated 914s in two configurations—one that works for a dime and one that works for a quarter; the buyer or leaser of the machine decides which he wants to charge.)

Copying has its abuses, too, and they are clearly serious. The most obvious one is overcopying. A tendency formerly identified with bureaucrats is spreading—the urge to make two or more copies when one would do, and to make one when none would do; the phrase “in triplicate,” once used to denote bureaucratic waste, has become a gross understatement. The button waiting to be pushed, the whirl of action, the neat reproduction dropping into the tray—all this adds up to a heady experience, and the neophyte operator of a copier feels an impulse to copy all the papers in his pockets. And once one has used a copier, one tends to be hooked. Perhaps the chief danger of this addiction is not so much the cluttering up of files and loss of important material through submersion as it is the insidious growth of a negative attitude toward originals—a feeling that nothing can be of importance *unless* it is copied, or is a copy itself.

A more immediate problem of xerography is the overwhelming temptation it offers to violate the copyright laws. Almost all large public and college libraries—and many high-school libraries as well—are now equipped with copying machines, and teachers and students in need of a few copies of a group of poems from a published book, a certain short story from an anthology, or a certain article from a scholarly journal have developed the habit of simply plucking it from the library's shelves, taking it to the library's reproduction department, and having the required number of Xerox copies made. The effect, of course, is to deprive the author and the publisher of income. There are no legal records of such infringements of copyright, since publishers and authors almost never

sue educators, if only because they don't know that the infringements have occurred; furthermore, the educators themselves often have no idea that they have done anything illegal. The likelihood that many copyrights have already been infringed unknowingly through xerography became indirectly apparent a couple of years ago when a committee of educators sent a circular to teachers from coast to coast informing them explicitly what rights to reproduce copyrighted material they did and did not have, and the almost instant sequel was a marked rise in the number of requests from educators to publishers for permissions. And there is more concrete evidence of the way things have been going; for example, in 1965 a staff member of the library school of the University of New Mexico publicly advocated that libraries spend ninety per cent of their budgets on staff, telephones, copying, telefacsimiles, and the like, and only ten per cent—a sort of tithe—on books and journals.

To a certain extent, libraries attempt to police copying on their own. The photographic service of the New York Public Library's main branch, which fills some fifteen hundred requests a week for copies of library matter, informs patrons that "copyrighted material will not be reproduced beyond 'fair use'"—that is, the amount and kind of reproduction, generally confined to brief excerpts, that have been established by legal precedent as not constituting infringement. The library goes on, "The applicant assumes all responsibility for any question that may arise in the making of the copy and in the use made thereof." In the first part of its statement the library seems to assume the responsibility and in the second part to renounce it, and this ambivalence may reflect an uneasiness widely felt among users of library copiers. Outside library walls, there often does not seem to be even this degree of scruple. Business people who are otherwise meticulous in their observance of the law seem to regard copyright infringement about as seriously as they regard jaywalking. A writer I've heard about was invited not long ago to a seminar of high-level and high-minded industrial leaders and was startled to find that a chapter from his most recent book had been copied and distributed to the participants, to serve as a basis for discussion. When the writer protested, the businessmen were taken aback, and even injured; they had thought the writer would be pleased by their attention to his work, but the flattery, after all, was of the sort shown



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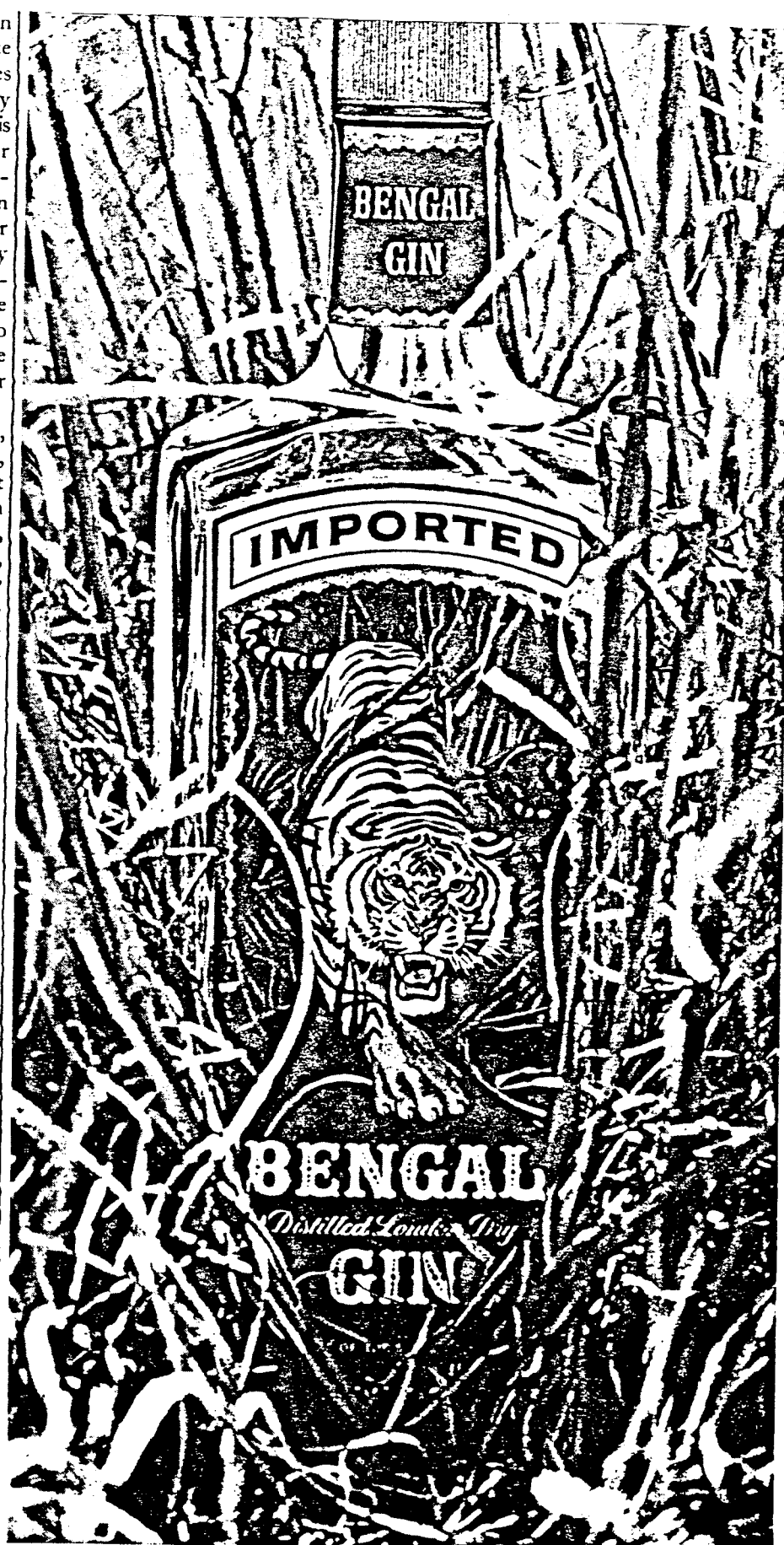
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by a thief who commends a lady's jewelry by making off with it.

In the opinion of some commentators, what has happened so far is only the first phase of a kind of revolution in graphics. "Xerography is bringing a reign of terror into the world of publishing, because it means that every reader can become both author and publisher," the Canadian sage Marshall McLuhan wrote in the spring, 1966, issue of the *American Scholar*. "Authorship and readership alike can become production-oriented under xerography. . . . Xerography is electricity invading the world of typography, and it means a total revolution in this old sphere." Even allowing for McLuhan's erratic ebullience ("I change my opinions daily," he has confessed), he seems to have got his teeth into something here. Various magazine articles have predicted nothing less than the disappearance of the book as it now exists, and pictured the library of the future as a sort of monster computer capable of storing and retrieving the contents of books electronically and xerographically. The "books" in such a library would be tiny chips of computer film—"editions of one." Everyone agrees that such a library is still some time away. (But not so far away as to preclude a wary reaction from at least one forehanded publisher. Beginning late last year, the long-familiar "all rights reserved" rigmarole on the copyright page of all books published by Harcourt, Brace & World was altered to read, a bit spookily, "All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system . . .") One of the nearest approaches to it today is the Xerox subsidiary University Microfilms, which can, and does, enlarge its microfilms of out-of-print books and print them as attractive and highly legible paperback volumes, at a cost to the customer of four cents a page; in cases where the book is covered by copyright, the firm pays a royalty to the author on each copy produced. But the time when almost anyone can make his own copy of a published book at lower than the market price is not some years away; it is now. All that the amateur publisher needs is access to a Xerox machine and a small offset printing press. One of the lesser but still important attributes of xerography is its ability to make master copies for use on offset presses, and make them much more cheaply and quickly than was

previously possible. According to Irwin Karp, counsel to the Authors League of America, an edition of fifty copies of any printed book can be handsomely "published" (minus the binding) by this combination of technologies in a matter of minutes at a cost of about eight-tenths of a cent per page, and less than that if the edition is larger. A teacher wishing to distribute to a class of fifty students the contents of a sixty-four-page book of poetry selling for three dollars and seventy-five cents could do so, if he was disposed to ignore the copyright laws, at a cost of slightly over fifty cents per copy.

The danger in the new technology, authors and publishers have contended, is that in doing away with the book it may do away with them, and thus with writing itself. Herbert S. Bailey, Jr., director of Princeton University Press, wrote recently in the *Saturday Review* of a scholar friend of his who has cancelled all his subscriptions to scholarly journals; instead, he now scans their tables of contents at his public library and makes copies of the articles that interest him. Bailey commented, "If all scholars followed [this] practice, there would be no scholarly journals." During the past couple of years, Congress has been considering a revision of the copyright laws—the first since 1909. At the hearings, a committee representing the National Education Association and a clutch of other education groups has argued firmly and persuasively that if education is to keep up with our national growth, the present copyright law and the fair-use doctrine should be liberalized for scholastic purposes. The authors and publishers, not surprisingly, have opposed such liberalization, insisting that any extension of existing rights would tend to deprive them of their livelihoods to some degree now, and to a far greater degree in the uncharted xerographic future. A bill that was approved recently by the House Judiciary Committee, is now being considered by a Senate subcommittee, and is expected to come to a vote in both houses during 1967 seems to represent a victory for them, since it explicitly sets forth the fair-use doctrine and contains no educational-copying exemption. McLuhan, for one, is convinced that all efforts to preserve the old forms of author protection represent backward thinking and are doomed to failure (or, anyway, he was convinced the day he wrote his *American Scholar* article). "There is no possible protection from technology except by technology," he wrote. "When you create a new environment



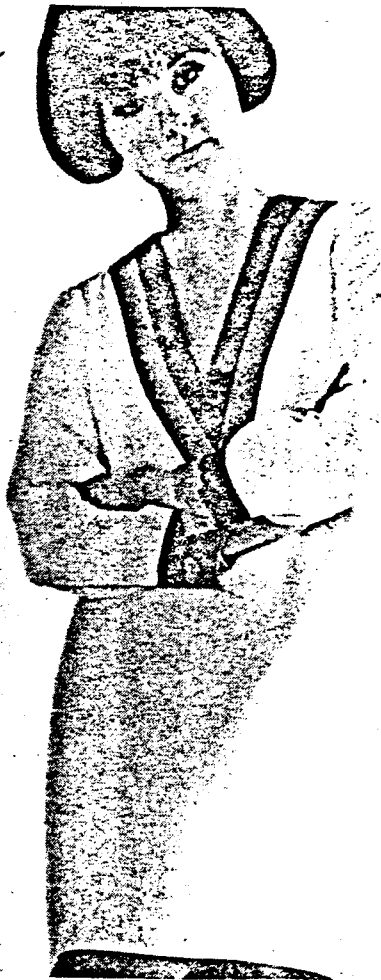
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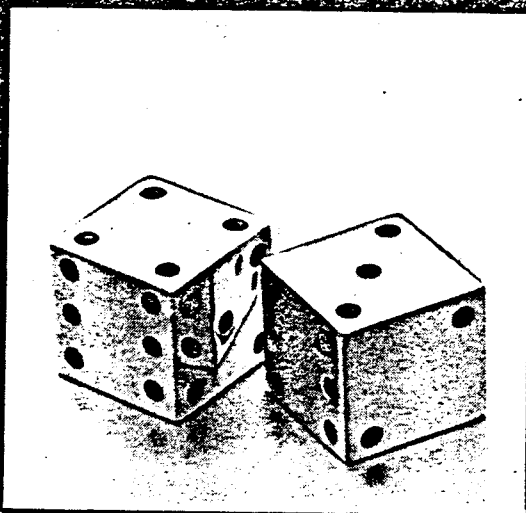
NY 467

with one phase of technology, you have to create an anti-environment with the next." But authors are seldom good at technology, and probably do not flourish in anti-environments.

In dealing with this Pandora's box that Xerox products have opened, the company seems to have measured up tolerably well to its lofty ideals as set forth by Wilson. Although it has a commercial interest in encouraging—or, at least, not discouraging—more and more copying of just about anything that can be read, it makes more than a token effort to inform the users of its machines of their legal responsibilities; for example, each new machine that is shipped out is accompanied by a cardboard poster giving a long list of things that may not be copied, among them paper money, government bonds, postage stamps, passports, and "copyrighted material of any manner or kind without permission of the copyright owner." (How many of these posters end up in wastebaskets is another matter.) Moreover, caught in the middle between the contending factions in the fight over revision of copyright law, it has resisted the temptation to stand piously aside while raking in the profits, and has shown an exemplary sense of social responsibility—at least from the point of view of the authors and publishers. The copying industry in general, by contrast, has tended either to remain neutral or to lean to the educators' side. At a 1963 symposium on copyright revision, an industry spokesman went as far as to argue that machine copying by a scholar is merely a convenient extension of hand copying, which has traditionally been accepted as legitimate. But not Xerox. Instead, in September, 1965, Wilson wrote to the House Judiciary Committee flatly opposing any kind of special copying exemption in any new law. Of course, in evaluating this seemingly quixotic stand one ought to remember that Xerox is a publishing firm as well as a copying-machine firm; indeed, what with American Education Publications and University Microfilms, it is one of the largest publishing firms in the country. Conventional publishers, I gathered from my researches, sometimes find it a bit bewildering to be confronted by this futuristic giant not merely as an alien threat to their familiar world but as an energetic colleague and competitor within it.

HAVING had a look at some Xerox products and devoted some thought to the social implications of their use, I went to Rochester to

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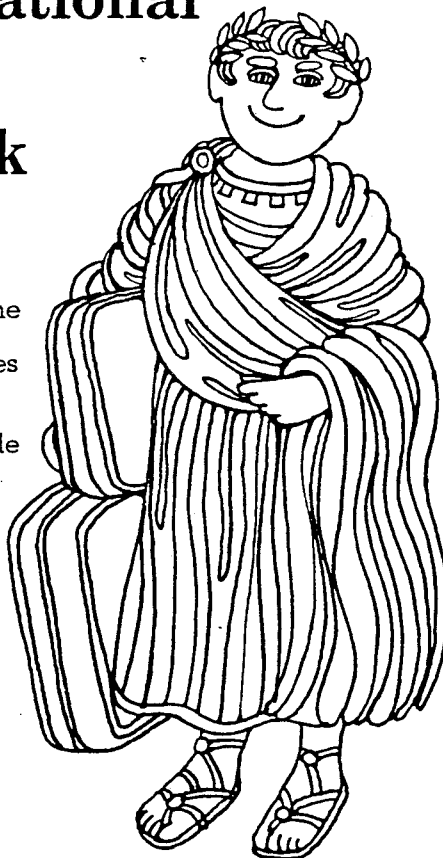
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ATHENS HILTON



scrape up a first-hand acquaintance with the company and to get an idea how its people were reacting to their problems, material and moral. At the time I went, the material problems certainly seemed to be to the fore, since the week of the forty-two-and-a-half-point stock drop was not long past. On the plane en route, I had before me a copy of Xerox's most recent proxy statement, which listed the number of Xerox shares held by each director as of February, 1966, and I amused myself by calculating some of the directors' paper losses in that one bad October week, assuming that they had held on to their stock. Chairman Wilson, for example, had held 154,026 common shares in February, so his loss would have been \$6,546,105. Linowitz's holding was 35,166 shares, for a loss of \$1,494,555. Dr. John H. Des-sauer, executive vice-president in charge of research, had held 73,845 shares and was therefore presumably out \$3,138,412.50. Such sums could hardly be considered trivial even by Xerox executives. Would I, then, find their premises pervaded by gloom, or at least by signs of shock?

The Xerox executive offices are on the upper floors of Rochester's Midtown Tower, the ground level of which is occupied by Midtown Plaza, an indoor shopping mall. (Later this year, the company will move its headquarters across the street to Xerox Square, a complex, now under construction, that will include a thirty-story office building, an auditorium for civic as well as company use, and a sunken ice rink just like Rockefeller Center's.) Before going up to the Xerox offices, I took a turn or two around the mall, and found it to be equipped with all kinds of shops, a café, kiosks, pools, trees, and benches that—in spite of an oppressively bland and affluent atmosphere, created mainly, I suspect, by bland piped-in music—were occupied in part by bums, just like the benches in outdoor malls. The trees had a tendency to languish for lack of light and air, but the bums looked O.K. Having ascended by elevator, I met a Xerox public-relations man with whom I had an appointment, and immediately asked him how the company had reacted to the stock drop. "Oh, nobody takes it too seriously," he replied. "You hear a lot of lighthearted talk about it at the golf clubs. One fellow will say to another, 'You buy the drinks—I dropped another eighty thousand dollars on Xerox yesterday.' Joe Wilson *did* find it a bit traumatic that day they had to suspend trading on the Stock Exchange, but otherwise he took it in



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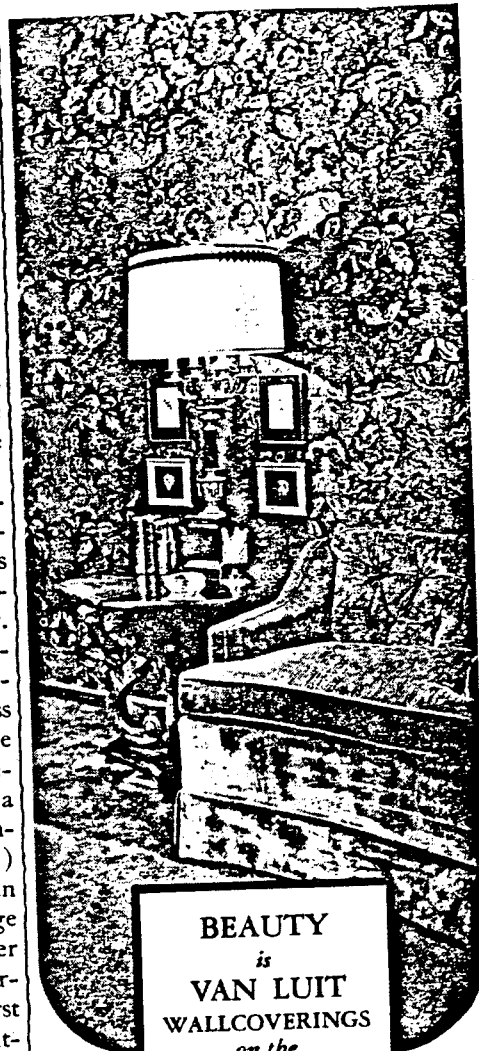
WASHINGTON

Seattle—British Motor Car Distributors, Inc.

stride. In fact, at a party the other day when the stock was way down and a lot of people were clustering around him asking him what it all meant, I heard him say, 'Well, you know, it's very rarely that opportunity knocks twice.' As for the office, you scarcely hear the subject mentioned at all." As a matter of fact, I scarcely did hear it mentioned again while I was at Xerox, and this sang-froid turned out to be justified, because within a little more than a month the stock had made up its entire loss, and within a few more months it had moved up to an all-time high.

I spent the rest of that morning calling on three scientific and technical Xerox men and listening to nostalgic tales of the early years of xerographic development. The first of these men was Dr. Dessauer, the previous week's three-million-dollar loser, whom I nevertheless found looking tranquil—as I guess I should have expected, in view of the fact that his Xerox stock was still presumably worth more than nine and a half million dollars. (It is now presumably worth not quite twenty million.) Dr. Dessauer, a German-born veteran of the company who has been in charge of its research and engineering ever since 1938 and is now also vice-chairman of its board, was the man who first brought Carlson's invention to the attention of Joseph Wilson, after he had read an article about it in a technical journal in 1945. Stuck up on his office wall, I noticed, was a greeting card from members of his office staff in which he was hailed as the "Wizard," and I found him to be a smiling, youthful-looking man with just enough of an accent to pass muster for wizardry.

"You want to hear about the old days, eh?" Dr. Dessauer said. "Well, it was exciting. It was wonderful. It was also terrible. Sometimes I was going out of my mind, more or less literally. Money was the main problem. The company was fortunate in being modestly in the black, but not far enough. The members of our team were all gambling on the project. I even mortgaged my house—all I had left was my life insurance. My neck was way out. My feeling was that if it didn't work Wilson and I would be business failures but as far as I was concerned I'd also be a technical failure. Nobody would ever give me a job again. I'd have to give up science and sell insurance or something." Dr. Dessauer threw a retrospectively distracted glance at the ceiling and went on, "Hardly anybody was very optimistic in the early years. Various members



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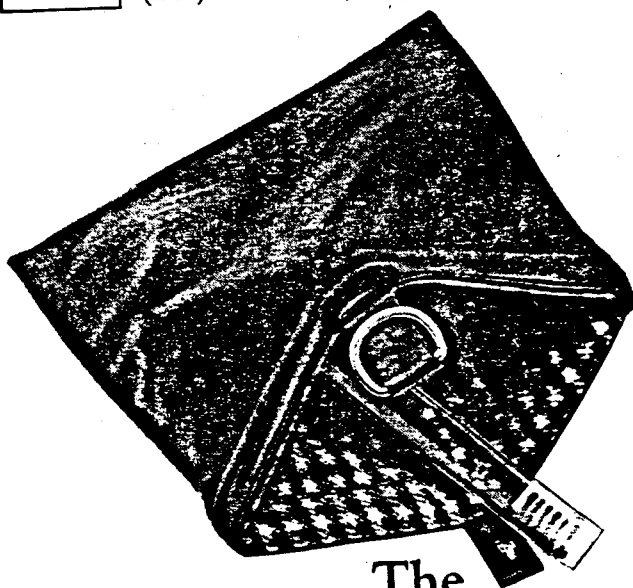
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of our own group would come in and tell me that the damn thing would never work. The biggest risk was that electrostatics would prove to be not feasible in high humidity. Almost all the experts assumed that—they'd say, 'You'll never make copies in New Orleans.' And even if it did work, the marketing people thought we were dealing with a potential market of no more than a few thousand machines. Some advisers told us that we were absolutely crazy to go ahead with the project. Well, as you know, everything worked out all right—the 914 worked, even in New Orleans, and there was a big market for it. Then came the desk-top version, the 813. I stuck my neck way out again on that, holding out for a design that some experts considered too fragile."

I asked Dr. Dessauer whether his neck is now out on anything in the way of new research, and, if so, whether it is as exciting as xerography was. He replied, "Yes to both questions, but beyond that the subject is privileged knowledge."

Dr. Harold E. Clark, the next man I saw, had been in direct charge of the xerography-development program under Dr. Dessauer's supervision, and he gave me more details on how the Carlson invention had been coaxed and nursed into a commercial product. "Chet Carlson was morphological," began Dr. Clark, a short man with a professorial manner who was, in fact, a professor of physics before he came to Haloid in 1949. I probably looked blank, because Dr. Clark gave a little laugh and went on, "I don't really know whether 'morphological' means anything. I *think* it means putting one thing together with another thing to get a new thing. Anyway, that's what Chet was. Xerography had practically no foundation in previous scientific work. Chet put together a rather odd lot of phenomena, each of which was obscure in itself and none of which had previously been related in anyone's thinking. The result was the biggest thing in imaging since the coming of photography itself. Furthermore, he did it entirely without the help of a favorable scientific climate. As you know, there are dozens of instances of simultaneous discovery down through scientific history, but no one came anywhere near being simultaneous with Chet. I'm as amazed by his discovery now as I was when I first heard of it. As an invention, it was magnificent. The only trouble was that as a product it wasn't any good."

Dr. Clark gave another little laugh

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and went on to explain that the turning point was reached at the Battelle Memorial Institute, and in a manner fully consonant with the tradition of scientific advances' occurring more or less by mistake. The main trouble was that Carlson's photoconductive surface, which was coated with sulphur, lost its qualities after it had made a few copies and became useless. Acting on a hunch unsupported by scientific theory, the Battelle researchers tried adding to the sulphur a small quantity of selenium, a non-metallic element previously used chiefly in electrical resistors and as a coloring material to redden glass. The selenium-and-sulphur surface worked a little better than the all-sulphur one, so the Battelle men tried adding a little more selenium. More improvement. They gradually kept increasing the percentage until they had a surface consisting entirely of selenium—no sulphur. That one worked best of all, and thus it was found, backhandedly, that selenium and selenium alone could make xerography practical.

"Think of it," Dr. Clark said, looking thoughtful himself. "A simple thing like selenium—one of the earth's elements, of which there are hardly more than a hundred altogether, and a common one at that. It turned out to be the key. Once its effectiveness was discovered, we were around the corner, although we didn't know it at the time. We still hold patents covering the use of selenium in xerography—almost a patent on one of the elements. Not bad, eh? Nor do we understand exactly *how* selenium works, even now. We're mystified, for example, by the fact that it has no memory effects—no traces of previous copies are left on the selenium-coated drum—and that it seems to be theoretically capable of lasting indefinitely. In the lab, a selenium-coated drum will last through a million processes, and we don't understand why it wears out even then. So, you see, the development of xerography was largely empirical. We were trained scientists, not Yankee tinkers, but we struck a balance between Yankee tinkering and scientific inquiry."

Next, I talked with Horace W. Becker, the Xerox engineer who was principally responsible for bringing the 914 from the working-model stage to the production line. A Brooklynite with a talent, appropriate to his assignment, for eloquent anguish, he told me of the hair-raising obstacles and hazards that surrounded this progress. When he joined Haloid Xerox in 1958, his laboratory was a loft above a Rochester garden-seed-packaging establishment;

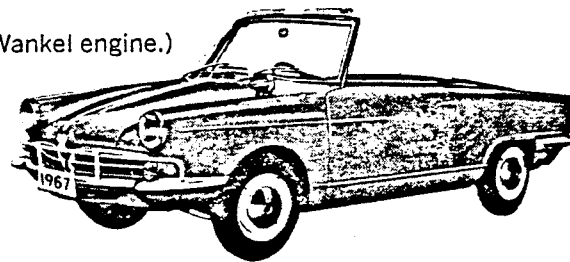
something was wrong with the roof, and on hot days drops of molten tar would ooze through it and spatter the engineers and the machines. The 914 finally came of age in another lab, on Orchard Street, early in 1960. "It was a beat-up old loft building, too, with a creaky elevator and a view of a railroad siding where cars full of pigs kept going by," Becker told me, "but we had the space we needed, and it didn't drip tar. It was at Orchard Street that we finally caught fire. Don't ask me how it happened. We decided it was time to set up an assembly line, and we did. Everybody was keyed up. The union people temporarily forgot their grievances, and the bosses forgot their performance ratings. You couldn't tell an engineer from an assembler in that place. No one could stay away—you'd sneak in on a Sunday, when the assembly line was shut down, and there would be somebody adjusting something or just puttering around and admiring our work. In other words, the 914 was on its way at last."

But once the machine was on its way out of the shop and on to showrooms and customers, Becker related, his troubles had only begun, because he was now held responsible for malfunctions and design deficiencies, and when it came to having a spectacular collapse just at the moment when the public spotlight was full on it, the 914 turned out to be a veritable Edsel. Intricate relays declined to work, springs broke, power supplies failed, inexperienced users dropped staples and paper clips into it and fouled the works (necessitating the installation in every machine of a staple-catcher), and the expected difficulties in humid climates developed, along with unanticipated ones at high altitudes. "All in all," Becker said, "at that time the machines had a bad habit, when you pressed the button, of doing nothing." Or if the machines did do something, it was something wrong. At the 914's first big showing in London, for instance, Wilson himself was on hand to put a ceremonial forefinger to its button; he did so, and not only was no copy made but a giant generator serving the line was blown out. Thus was xerography introduced in Great Britain, and, considering the nature of its debut, the fact that Britain has since become far and away the biggest overseas user of the 914 appears to be a tribute to both Xerox resilience and British patience.

That afternoon, a Xerox guide drove me out to Webster, a farm town near the edge of Lake Ontario, a few miles from Rochester, to see the incon-

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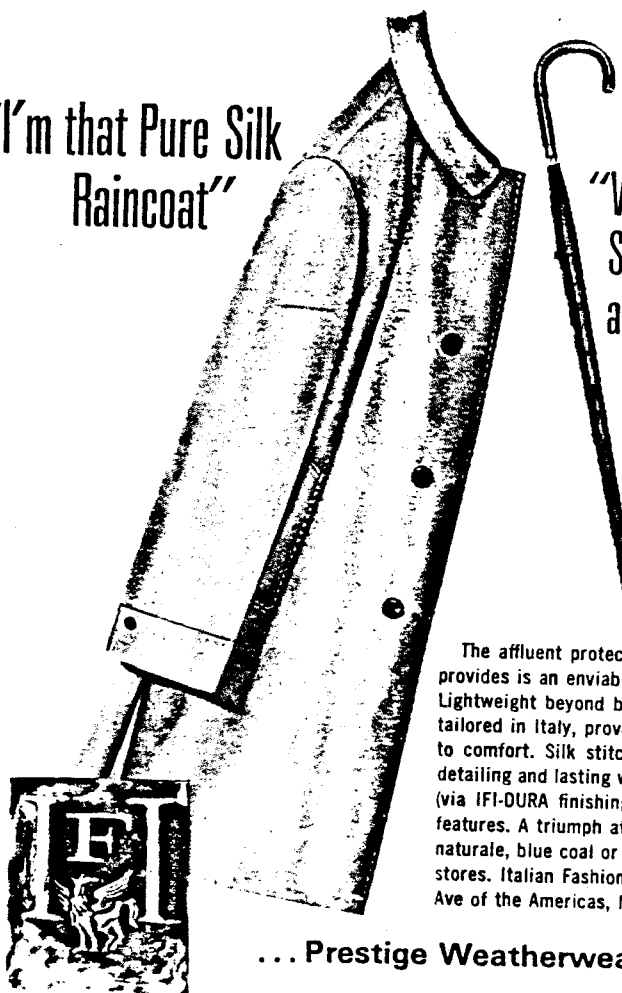


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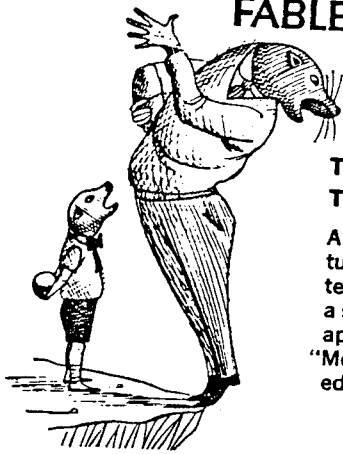
gruous successor to Becker's leaky and drafty lofts—a huge complex of modern industrial buildings, including one of roughly a million square feet where all Xerox copiers are assembled (except those made by the company's affiliates in Britain and Japan), and another, somewhat smaller but more svelte, where research and development are carried out. As we walked down one of the humming production lines in the manufacturing building, my guide explained that the line operates sixteen hours a day on two shifts, that it and the other lines have been lagging behind demand continuously for several years, that there are now almost two thousand employees working in the building, and that their union is a local of the Amalgamated Clothing Workers of America, this anomaly being due chiefly to the fact that Rochester used to be a center of the clothing business and the Clothing Workers has long been the strongest union in the area.

After my guide had delivered me back to Rochester, I set out on my own to collect some opinions on the community's attitude toward Xerox and its success. I found them to be ambivalent. "Xerox has been a good thing for Rochester," said a local businessman. "Eastman Kodak, of course, was the city's Great White Father for years, and it is still far and away the biggest local business, although Xerox is now second and coming up fast. Facing that kind of challenge doesn't do Kodak any harm—in fact, it does it a lot of good. Besides, a successful new local company means new money and new jobs. On the other hand, some people around here resent Xerox. Most of the local industries go back to the nineteenth century, and their people aren't always noted for receptiveness to newcomers. When Xerox was going through its meteoric rise, some thought the bubble would burst—no, they *hoped* it would burst. On top of that, there's been a certain amount of feeling against the way Joe Wilson and Sol Linowitz are always talking about human values while making money hand over fist. But, you know—the price of success."

I went out to the University of Rochester, high on the banks of the Genesee River, and had a talk with its president, W. Allen Wallis. A tall man with red hair, trained as a statistician, Wallis serves on the boards of several Rochester companies, including Eastman Kodak, which has always been the university's Santa Claus and remains its biggest annual benefactor. As for Xerox, the university has several sound reasons for feeling kindly toward it. In

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the first place, the university is a prize example of a Xerox multimillionaire, since its clear capital gain on the investment now amounts to around a hundred million dollars and it has taken out more than ten million in profits. In the second place, Xerox comes through with annual cash gifts second only to Kodak's, and recently pledged nearly six million dollars to the university's capital-funds drive. In the third place, Wilson, a University of Rochester graduate himself, has been on the university's board of trustees since 1949 and its chairman since 1959. "Before I came here, in 1962, I'd never even heard of corporations' giving universities such sums as Kodak and Xerox give us now," President Wallis said. "And all they want in return is for us to provide top-quality education—not do their research for them, or anything like that. Oh, there's a good deal of informal technical consulting between our scientific people and the Xerox people—same thing with Kodak, Bausch & Lomb, and others—but that's not why they're supporting the university. They want to make Rochester a place that will be attractive to the people they want here. The university has never invented anything for Xerox, and I guess it never will."

The next morning, in the Xerox executive offices, I met the three non-technical Xerox men of the highest magnitude, ending with Wilson himself. The first of these was Linowitz, the lawyer whom Wilson took on "temporarily" in 1946 and kept on permanently as his least dispensable aide. (Since Xerox became famous, the general public has tended to think of Linowitz as more than that—as, in fact, the company's chief executive. Xerox officials are aware of this popular misconception, and are mystified by it, since Wilson, whether he was called president, as he was until last May, or chairman of the board, as he is now, has been the boss right along.) I caught Linowitz almost literally on the run, since he had just been appointed United States Ambassador to the Organization of American States and was about to leave Rochester and Xerox for Washington and his new duties. A vigorous man in his fifties, he fairly exudes drive, intensity, and sincerity. After apologizing for the fact that he had only a few minutes to spend with me, he said, rapidly, that in his opinion the success of Xerox was proof that the old ideals of free enterprise still held true, and that the qualities that had made for the company's success were idealism, tenacity, the courage to take risks, and en-

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thusiasm. With that, he waved goodbye and was off. I was left feeling a little like a whistle-stop voter who has just been briefly addressed by a candidate from the rear platform of a campaign train, but, like many such voters, I was impressed. Linowitz had used those banal words not merely as if he meant them but as if he had invented them, and I had the feeling that Wilson and Xerox were going to miss him.

I found C. Peter McColough, who has been president of the company since Wilson moved up to chairman last May, and who was apparently about to inherit Linowitz's status as No. 2 man, pacing his office like a caged animal, pausing from time to time at a standup desk, where he would scribble something or bark a few words into a dictating machine. A liberal Democratic lawyer, like Linowitz, but a Canadian by birth, he is a cheerful extrovert who, being in his early forties, is spoken of as representing a new Xerox generation, and is largely charged with determining the course that the company will take next. "I face the problems of growth," he told me after he had abandoned his pacing for a restless perch on the edge of a chair. Future growth on a large scale simply isn't possible in xerography, he went on—there isn't room enough left—and the direction that Xerox is taking is toward educational techniques. He mentioned computers and teaching machines, and when he said he could "dream of a system whereby you'd write stuff in Connecticut and within hours reprint it in classrooms all over the country," I got the feeling that some of Xerox's educational dreams could easily become nightmares. But then he added, "The danger in ingenious hardware is that it distracts attention from education. What good is a wonderful machine if you don't know what to put on it?"

McColough said that since he came to Haloid, in 1954, he felt he'd been part of three entirely different companies—until 1959 a small one engaged in a dangerous and exciting gamble; from 1959 to 1964 a growing one enjoying the fruits of victory; and now a huge one branching out in new directions. I asked him which one he liked best, and he thought a long time. "I don't know," he said finally. "I used to feel greater freedom, and I used to feel that everyone in the company shared attitudes on specific matters like labor relations. I don't feel that way so much now. The pressures are greater, and the company is more impersonal. I wouldn't say that life has be-

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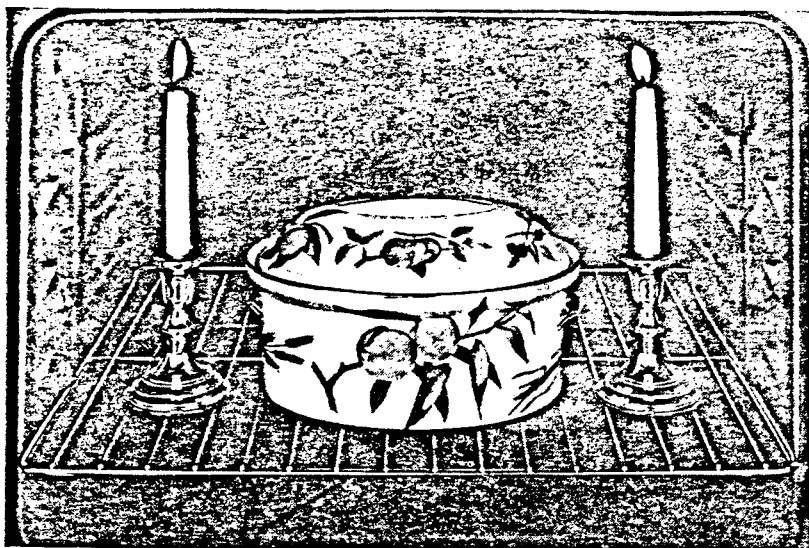
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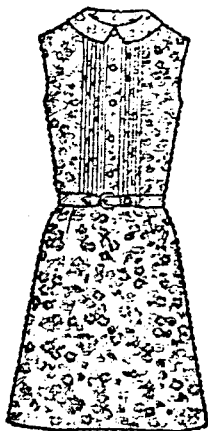
Of all the surprising things about Joseph C. Wilson, not the least, I thought when I was ushered into his presence, was the fact that his office walls were decorated with old-fashioned flowered wallpaper. A sentimental streak in the man at the head of Xerox seemed the most unlikely of anomalies. But he had a homey, unthreatening bearing to go with the wallpaper; a smallish man in his late fifties, he looked serious—almost grave—during most of my visit, and spoke in a slow, rather hesitant way. I asked him how he had happened to go into his family's business, and he replied that as a matter of fact he nearly hadn't. English literature had been his second major at the university, and he had considered either taking up teaching or going into the financial and administrative end of university work. But after graduating he had gone on to the Harvard Business School, where he had been a top student, and somehow or other... In any case, he had joined Haloid the year he left Harvard, and there, he told me with a sudden smile, he was.

The subjects that Wilson seemed to be most keen on discussing were Xerox's non-profit activities and his theories of corporate responsibility. "There are certain feelings of resentment toward us on this," he said. "I don't mean just from stockholders complaining that we're giving their money away—that point of view is losing ground. I mean in the community. You don't actually hear it, but you sometimes get a kind of intuitive feeling that people are saying, 'Who do these young upstarts think they are, anyhow?'"

I asked whether the letter-writing campaign against the U.N. television series had caused any misgivings or downright faintheartedness within the company, and he said, "As an organization, we never wavered. Almost without exception, the people here felt that the attacks only served to call attention to the very point we were trying to make—that world coöperation is our business, because without it there might be no world and therefore no business. We believe we followed sound business policy in going ahead with the series. At the same time, I won't maintain that it was *only* sound business policy. I doubt whether we would have done it if, let's say, we had all been Birchers ourselves."

Wilson went on slowly, "The whole matter of committing the company to taking stands on major public issues raises questions that make us examine

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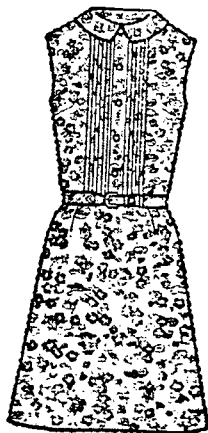


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ourselves all the time. It's a matter of balance. You can't just be bland, or you throw away your influence. But you can't take a stand on every major issue, either. We don't think it's a corporation's job to take stands on national elections, for example—fortunately, perhaps, since Sol Linowitz is a Democrat and I'm a Republican. Issues like university education, civil rights, and Negro employment clearly *are* our business. I'd hope that we would have the courage to stand up for a point of view that was unpopular if we thought it was appropriate to do so. So far, we haven't faced that situation—we haven't found a conflict between what we consider our civic responsibility and good business. But the time may come. We may have to stand on the firing line yet. For example, we've tried, without much fanfare, to equip some Negro youths to take jobs beyond sweeping the floor and so on. The program required complete cooperation from our union, and we got it. But I've learned that, in subtle ways, the honeymoon is over. There's an undercurrent of opposition. Here's something started, then, that if it grows could confront us with a real business problem. If it becomes a few hundred objectors instead of a few dozen, things might even come to a strike, and in such a case I hope we and the union leadership would stand up and fight. But I don't really know. You can't honestly predict what you'd do in a case like that. I *think* I know what we'd do."

Getting up and walking to a window, Wilson said that, as he saw it, one of the company's major efforts now, and even more in the future, must be to keep the personal and human quality for which it has come to be known. "Already we see signs of losing it," he said. "We're trying to indoctrinate new people, but twenty thousand employees around the Western Hemisphere isn't like a thousand in Rochester."

I joined Wilson at the window, preparatory to leaving. It was a dank, dark morning, such as I'm told the city is famous for much of the year, and I asked him whether, on a gloomy day like this, he was ever assailed by doubts that the old quality *could* be preserved. He nodded briefly and said, "It's an everlasting battle, which we may or may not win."

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