

NEW THINGS

WHEN FUZZY TURNS TO CLARITY

When a priceless snapshot of young Molly in her first Little League uniform comes back from processing out of focus, there's nothing you can do but fume in frustration. But if plans at Photo Electronics Corporation work out, you'll soon be able to have

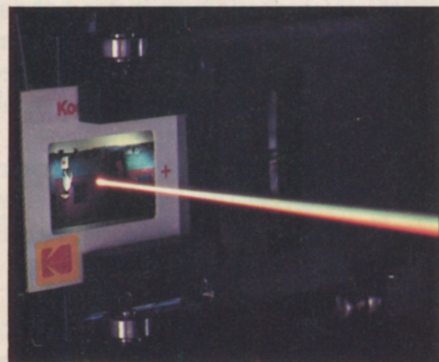


Photo Fix: New laser surgery will perfect imperfect photographs.

flawed photographs electronically altered to picture-perfection.

In 1979, the Florida-based company developed the "LaserColor" electronic printer, which uses a scanner and computer to "read" original slides and "write" them out with amazing clarity. But the real fun is still ahead. Since the images can now be converted into electronic data, they can be processed in a number of ways to improve the original shot. When the LaserColor Model II comes on the market at the end of 1982, it will be able to refocus your fuzzy shots of little Molly, correct the poor exposure of handsome Dean's wedding, and get Uncle John's index finger out of the family barbecue.

NO DEPOSIT, BUT SOME RETURN

It may come as a shock to Bill Blass, but a tire company is making suits out of soft-drink bottles.

The credit, if it is due, goes to the Goodyear Tire and Rubber Company, which recently transformed 28 recycled plastic bottles into a "stylish" polyester coat, pants and matching tie. Goodyear hopes that Coca-clothing

and other bottle couture will catch on; the company sells the stuff that bottles are made of.

WHAT TO DO WITH A STERILE FISH

Cross two weed-eating fish—a bighead carp and a white amur—and what do you get? A sterile weed-eating fish.

Terrific. But why would you want one? Gene Otto and Tom Jackson, Federal biologists, hope that the fish will serve as canal-dredgers.

If all goes according to plan, the fish will be released into weed-clogged canals and eat their way through the vegetation, thereby increasing water flow by 50 percent. They will reduce the need for gasoline-fueled dredgers and petroleum-based herbicides, and save users of the canals an estimated \$175 million each year. After 10 to 12 years of feasting, the fish die, leaving no troublesome offspring to overpopulate the waters.



Heirless Fish: It won't multiply, but it should be able to subtract.

THE NATURAL ORDER OF ENGINEERING

A zeppelin-shaped oil tanker may someday cross the ocean underwater, fuel-efficient and impervious to rough weather, if human engineers take a cue from nature.

Steven Vogel, a scientist at Duke University who describes himself as "only one of a number of weird, underground biologists" studying biomechanics—the way nature designs things—thinks that engineers will be mimicking nature more often in the



Frustration in Three Dimensions:

Those playful people at Atari will soon be selling the first tabletop game with hologram cartridges. When you lose this one, a gloating green monster appears in 3-D. Call someone under 12 for help.

future. "Nature loves a bargain," Vogel says. "As the need to conserve energy and materials increases, we'll have to pay more attention to natural design options."

He suggests the streamlined oil tanker, for instance, "because I'm struck by how rare it is for nature to have organisms travel long distances over the surface of water. For example, I've never heard of an incident where you have beached whales all over the place after a hurricane, but beached tankers are not unknown. An oil tanker's cargo is not different in any fundamental way from whale guts."

Echoing the design philosophy of Buckminster Fuller, Vogel points out that humans build most structures in rectangles, the weakest possible form, while nature uses circles, hexagons, triangles and pentagons.

Nature also builds its structures from composite materials "with a variety of mechanical properties that tend to prevent catastrophic failure," Vogel says. Humans, on the other hand, primarily use stiff, inflexible materials prone to collapse. "Look at the pictures from last year's Italian earthquake," he suggests. "The trees didn't fall down. The houses did." ■

WORK

As an example of change it fears, it says production of a mechanical teleprinter required 72 hours of work by a precision mechanic, but that manufacture of a modern electronic teleprinter demands only 36 hours of his time. The union wants those mechanics to continue to be paid as if they worked 72 hours on each printer.

A rosier view of the changes in store for the skilled worker is depicted in a study conducted for the Bonn government by Prognos of Basel, Switzerland, and Mackintosh Consultants of Luton, England. Prognos and Mackintosh conclude that while modernization will eliminate about 1.4 million German jobs by 1990, it will create 1.5 million new jobs, most of which will require higher qualifications than those abolished.

Even with Germany's Employment Promotion Act of 1969, which guarantees a person up to 80 percent of his former income while being retrained, it remains to be seen how many workers will accept retraining.

Chancellor Helmut Schmidt, a Social Democrat who relies on the labor vote and is worried about Germany's future export position, has called attention to the problem in its larger context. He says Germany "must develop new products and new production methods, and this means that everyone, employer and employee, must be flexible enough to adapt to the new situation.

"It is uncommonly difficult to change working habits and attitudes, and to be prepared, if necessary, to switch professions," Schmidt says. "I see here the greatest personal sacrifice that the working man is going to have to make in the next few years. But only the triad of innovation, investment, and personal flexibility will keep us competitive." —Wellington Long

INDUSTRY LOOKS ASKANCE AT PAPER

Ecologists' qualms about killing trees aren't the only reasons for drastically curtailing paper consumption. The vast number of hours spent typing, editing, copying, distributing, collating, batching, filing, finding, folding, bending, and mutilating paper seriously diminish productivity.

Inspired by surveys revealing



Dagmar Frinto

that 25 percent of its human resources were being used to create and store paperwork, 80 percent of which is never retrieved from files, Reliance Insurance of Philadelphia declared all-out war on paper. With a battle cry of "Paper Free in '83," the company is shifting from its paper addiction to almost total reliance on CRTs—cathode ray tube computer terminals equipped with typewriter keyboards. By 1983 both executives and clerical staff will be able to send and receive intra-office correspondence, consult company files, contact customers, keep tabs on premium payments, analyze investment information, and even process claims, all instantly and with a bare minimum of paper.

According to Reliance vice-president and paper-pogrom architect Ray Hafner, the technology for paperless data processing and micrographic storage already exists, but the problems of human engineering remain formidable. "First, you must have top-level management support, because if people at the top don't support it, employees think it's just a passing fancy. Then, to eliminate fear of the unknown, people need to understand the business reasons you're doing it—that companies that don't do something about paper just aren't going to be around in the 80s and 90s."

To measure its progress toward total paper emancipation, Reliance recently

sprang an unannounced "Paper-Free Day" on 225 employees in the corporate systems and administrative services branch. Forbidden to write letters or memos, fill out forms, use photocopy machines, or generate new paper in any way, employees had to rely on CRTs, telephones, and old-fashioned face-to-face communications. It worked.

Hafner contends that the Reliance paper chase is the vanguard of the future. "Other companies still believe you can't get executives to use CRTs because they're so used to having things done for them. But our executives use them. We tell our long-term clerical people that we consider them our most loyal and dedicated employees. We tell them we're giving them a new tool and that they may as well learn to use it at Reliance because if they go somewhere else, it's just a matter of time before that company gets it as well." —Theodore Fischer

ON THE HORIZON

- An "incredibly optimistic" job outlook for chemists and chemical engineers. Starting salaries are expected to continue rising faster than the rate of inflation. The most severe problem anticipated will affect smaller schools, which won't be able to compete with large universities and industry for chemistry teachers.

- Boom times for solar energy workers. Battelle Institute's Columbus Laboratories says employment in solar research, development, and manufacturing will triple by 1983. Engineers will be the occupational group most in demand, and California, New York, Massachusetts, Colorado, and Texas will be the industry hot spots.

- Chopin and Mozart on the factory floor. The John Deere Farm Equipment Company brings in a concert pianist and a grand piano to liven up its workers' lunch and coffee breaks. The workers go for Gershwin, too.

- One-paycheck families as a new economic underclass. An MIT-Harvard study points out that by 1990, husband-wife households in which only one spouse works will account for 14 percent of all households, down from 43 percent in 1960. Working wives will contribute a crucial 40 percent of all family income. ■