1974: The world works smarter

TEKTRONIX, INC. ANNUAL REPORT · 28TH YEAR · MAY 25, 1974

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SHAREOWNERS' MEETING

The annual meeting of shareowners of Tektronix, Inc., will be held on Saturday, September 21, 1974, at 9 a.m. Pacific Daylight Time, in the Cafeteria Building, S.W. Karl Braun Drive, Tektronix Industrial Park, near Beaverton, Oregon.

Transfer Agents	*Registrars*
United States National Bank of Oregon, Portland, Oregon	First National Bank of Oregon, Portland, Oregon
Morgan Guaranty Trust Company New York, New York	First National City Bank New York, New York

Mailing Address:
TEKTRONIX, INC., P.O. Box 500, Beaverton, Oregon 97005
Telephone (503) 644-0161

TO SHAREHOLDERS AND EMPLOYEES:

LIKE ANY year, ours had its good news and bad news. And neither one belongs first, since they interrelate.

The good news predominated. Sales increased faster than at any time in well over 10 years. Customer orders were very high. Over 35 new products were introduced that promise to make new inroads into the market. Output (although still not enough to cut backlog) went up impressively.

But inflation surged ahead, here and abroad. One effect was the need for an across-the-board pay raise unrelated to productivity. Interest rates climbed to new highs, especially unwelcome in a year when we were making large investments in facilities for future expansion.

SALES INCREASED from $202,855,000 to $271,428,000, and orders from $232,043,000 to $297,225,000. These are increases of 34 per cent and 28 per cent.

Operating earnings went up in proportion to sales, but non-operating expenses (especially high interest and currency translation loss) took their toll. Nevertheless, earnings were up a substantial 28 per cent, from $16,739,000 to $21,353,000.

Strong future growth seems assured, necessitating a substantial investment in buildings (11 built, on the way, or planned) and equipment. We expect all our expansion, except some facilities costs, to be financed from earnings.

So, it wasn't a bad year at all, although full of disturbing trends. For one, high inflation tends to disguise the fact that real GNP in the U.S. didn't increase in the last half of the fiscal year.

Manufacturing cost of sales decreased slightly, a sign of improved productivity. We need more of that. The other options in times of inflated costs are unpalatable second choices: Swallow the costs, and decrease profits; or just play the inflation game and pass them on to customers. We prefer to put our emphasis on productivity.

AMONG OUR new products, which will move into delivery position this year, are:

- *The 7844.* This 400-MHz state-of-the-art instrument is the world's highest-bandwidth dual-beam oscilloscope, essentially two scopes in one, and the only one with multiple (four) plug-in capability.
- *The 466.* For the first time, the world's fastest storage scope is a portable. Like each step forward in storage, this speed will allow retention of single-shot waveforms that otherwise would be too dim or even invisible. (It's the equivalent of faster and faster film to a photographer.)
- *The DM40 and DM43.* These digital meters are designed to be integral with our high-performance 465 and 475 portables. They provide digital time-interval readout as well as of volts, ohms, amperes and (with the DM43) temperature.

WE BOTH warmly welcome the employees of The Grass Valley Group, Inc. to Tektronix. You and your fine line of TV products have already made an enviable name for yourselves.

THE YEAR ahead may be rocky, and is bound to be challenging; but when hasn't that been the case?

There's certainly plenty of work to be done: Decreasing delivery time; tighter management of expenses to minimize inflation, and generally working smarter—as well as harder.

Our product line is strong, our range of skills wide, our technological vitality increasing. However the world around us shapes up, we're in position to do our very best.

Howard Vollum
Chairman of the Board

Earl Wantland
President

August 2, 1974

DIGITAL PROCESSING oscilloscope uses computer power to extract information from waveforms, during new-product research. It's shown with a 4012 graphic terminal.

1974: The world works smarter

THE KIDS, they say, the kids pretty soon will forget how to use their noodles—at least arithmetic-wise.

And the reason, they go on, is those expletive-deleted hand-held electronic calculators (which, they note, are predicted to be down to under 20 bucks a throw by Christmas) that give answers without anybody having to work for them. If nothing else, clearly an affront to the Puritan ethic.

Time is bound to tell whether the pocket calculator will make users mentally lazy and inept, or whether it will instead free the mind for more-inventive tasks (and mental arithmetic someday be seen as nothing more than intellectual pick-and-shovel work). But the little calculator is a clear symbol of mid-70's technology. Much as the transistor radio was, as a matter of fact, back in the '60's—and for much the same reason: More and more electronic performance in less and less space for fewer and fewer dollars. Make that cents.

Thus the same amount of calculating power that, 25 years ago, cost $100 is now available for about a penny, says one user. At that rate of improvement, he figures, a Rolls-Royce would now cost only $2.50—and get six million miles to the gallon.

Whatever the effect of pocket calculators—liberation or laziness—they're clearly here to stay. And if we do lose our ability to add and subtract (which, tax returns and bankbook balances show, is already something less than a formidable skill), that may be the price we choose to pay—just as partial use of our toes has been the price of wearing shoes, most of us having long ago opted for comfort over digital dexterity.

ELECTRONICS is pushy, no two ways about that—insinuating its way into one new field after another, there to stay, often replacing gears, levers and springs. Sometimes we notice; sometimes we don't. The "intelligent" oscilloscope (with computer capability) is here today. The "intelligent" TV set may be next or, in lieu of an intelligent driver, an "intelligent" automobile, that warns of potential collisions.

The electronic invasion is by no means new; it's been going on for years. Our cars are already smarter than we, and remind us of it from time to time by jeering whenever we open the door with the keys still in the ignition.

ONE CHARACTERISTIC of true revolutions seems to be that they

come about unannounced. Thus, predictions of "an electronics revolution," heard for over a decade now, were bound to generate expectations for a sudden upheaval of just about everything, that couldn't take place, and didn't.

A Tektronix engineer notes that it took 10 years for the transistor, one of the century's major developments, to find its way into widespread use. Part of the reason was price; part, simply the "human gap." It took time for vacuum-tube-oriented users to learn to trust the solid-state transistor and to redesign products around it.

The same delay, from invention to wide usage, has been true of each successive step, as electronics capability has shrunk in size and cost—to integrated circuits (ICs), packing hundreds of solid-state devices onto a single tiny silicon chip, then to large-scale integration (LSI), with *thousands* of devices per chip.

So this year, the arrival on the scene of the LSI microprocessor (about 1/10 inch square) was no revolution either, despite the insistence of its producers that it was and the genuine hubbub it's creating in the industry.

It's the microprocessor's brainpower-on-a-chip that makes the pocket calculator work, and the digital watch, and even microcomputers, including one programmable general-purpose computer model only as wide, high and thick as a soda cracker. It's at the very least a giant evolutionary step in electronics, and makes this year a dramatic one in which to focus on that dynamic market.

The new technology is clearly dominated by this country, which has a long, long lead over second-place Japan. (No one seems to know for sure who's third.)

Cost of microprocessors is going down fast. The $20 hand-held calculator (a serious forecast) will be no toy, but contain computational power that used to require a desktop instrument you had to punch and crank.

NOT THAT THE microprocessor will change Tektronix products radically and instantly (it won't), nor that pocket calculators represent the height of modern technology (they don't), nor that Tektronix builds them (we do not).

But they can be seen as an embodiment of two trends: One, the continued miniaturization of electronics can-do and its decreasing cost; and, two, the increasingly widespread availability of "artificial" (non-human) intelligence. (The consumer calculator market, which didn't even exist two years ago, is already larger than that for black-and-white TVs.)

The world is clearly working smarter. And that has very broad implications for Tektronix.

OUR BUSINESS grew by a full one-third this year, its largest jump in more than a decade.

In a year when some economists forecasted a leveling-off of Tektronix US business, and when the economy itself was nearly flat, orders grew instead by 31 per cent.

In a year when many European economies and that of Japan faltered and slid, our overseas orders increased by 24 per cent. As this is written, order rates continue healthy, and our backlog keeps moving from record high to record high.

So it must be that our markets have grown in number and size; that our share of those markets has increased, or that we've carved out new ones where none existed before.

Or (d) all of these.

SALES IN OUR newer product areas grew 1½ times as fast as those in our "traditional" one, cathode-ray oscilloscopes. At the same time, we maintained our commanding worldwide lead in the large and steadily growing scope market.

These non-oscilloscope product areas include two in which we increased our global leadership position: Graphic computer terminals and related peripherals; and television test instruments.

Newer ventures contributing to growth included programmable calculators, and the TM500 modular test and instrumentation system, underlining our commitment to become a major supplier of these products. □

Tektronix 1974 Financial Highlights

Restated to include The Grass Valley Group, Inc.

The accounting year is the 52 or 53 weeks ending the last Saturday in May.

1973		1974		Increase		
$202,855,000	100%	$271,428,000	100%	$68,573,000	34%	**RECEIVED BY THE COMPANY** For the sale of products, accessories, repair and replacement parts.
186,116,000	92%	250,075,000	92%	63,959,000	34%	**RELATED COSTS AND EXPENSES**
68,322,000	34%	98,353,000	36%	30,031,000	44%	TO OUTSIDE SOURCES To pay for raw materials, purchased parts, rent, utilities, insurance, advertising, interest and other business expenses.
94,258,000	47%	124,248,000	46%	29,990,000	32%	FOR EMPLOYEES To pay the men and women who design, make, sell and service our products — including profit share, social security and other employee benefits.
6,834,000	3%	7,525,000	3%	691,000	10%	FOR USE OF FACILITIES OWNED To provide for depreciation in value of buildings, machinery and furniture resulting from use, wear and age, mostly computed by sum-of-years-digits method.
16,702,000	8%	19,949,000	7%	3,247,000	19%	FOR TAXES To pay U.S., foreign, state and local taxes.
16,739,000	8%	21,353,000	8%	4,614,000	28%	**RESULTING IN EARNINGS** Reinvested in expansion of our business after payment of dividends.
$1.94		$2.47		53¢	27%	**EARNINGS PER COMMON SHARE** Dilution if all outstanding share options had been exercised would not have reduced primary earnings more than two cents.
20¢		20¢		—		**DIVIDENDS PAID PER SHARE**
232,043,000		297,255,000		65,212,000	28%	**ORDERS RECEIVED** Customers' orders measured at catalog price.

1973	1974	Increase (Decrease)	
$151,033,000	$176,405,000	$25,372,000	**Current Assets**
46,644,000	68,484,000	21,840,000	**Current Liabilities**
104,389,000	107,921,000	3,532,000	**Working Capital**
46,167,000	61,355,000	15,188,000	**Facilities—Net**
1,100,000	973,000	(127,000)	**Long-Term Indebtedness**
155,630,000	175,488,000	19,858,000	**Shareowners' Equity**
52,150,000	73,970,000	21,820,000	**Unfilled Customers' Orders** Measured at catalog price.
16,372,000	21,840,000	5,468,000	**Finished Product Inventory** Available for sale measured at catalog price.
10,580	12,693	2,113	**Number of Employees at Year End**

The non-comparable markets

ANNUAL REPORTS that speak in glowing terms of business without mentioning the U. S. and world economy have a hollowness to them —like the frozen smile of an airline stewardess during turbulence in flight.

A recent issue of Electronics Design contends that the industry is being dominated by three basic factors: "All-pervasive" semiconductors, energy consumption—and inflation.

Whatever the average shareholder may know of the first two, he (she) need look no farther than his (her) left hip pocket (purse) to realize that inflation is going on.

Other pages of this report comment further on the energy situation (a net plus, probably, for Tektronix) and our inflationary times (a net minus for everyone).

"COMPARISONS ARE tough from year to year," comments Don Alvey, Tektronix group vice-president, Marketing, "since you're always comparing non-comparable markets."

The push of electronic technology into more and more new fields, (which the lowering price of microprocessor chips will greatly accelerate) is bringing "profound changes to an already wide and rapidly growing variety of industries," says Business Week magazine. As one result, people we never even heard of a year ago have suddenly become users of our instruments—and substantial users at that.

TEKTRONIX, ONE of the world's two largest test-instrument companies, is growing faster than the electronics industry, and that industry is growing 50 per cent faster than the world's economy.

Industry expansion has a particularly direct effect on our largest product area, oscilloscopes. Uses of the scope, the basic tool of electronics, tend to increase in proportion to the number of electronic products and systems. Scopes are essential to the design, the production testing and very often the maintenance of whatever is electronic.

Our growth this year, as in other recent years, has come about primarily in three ways:

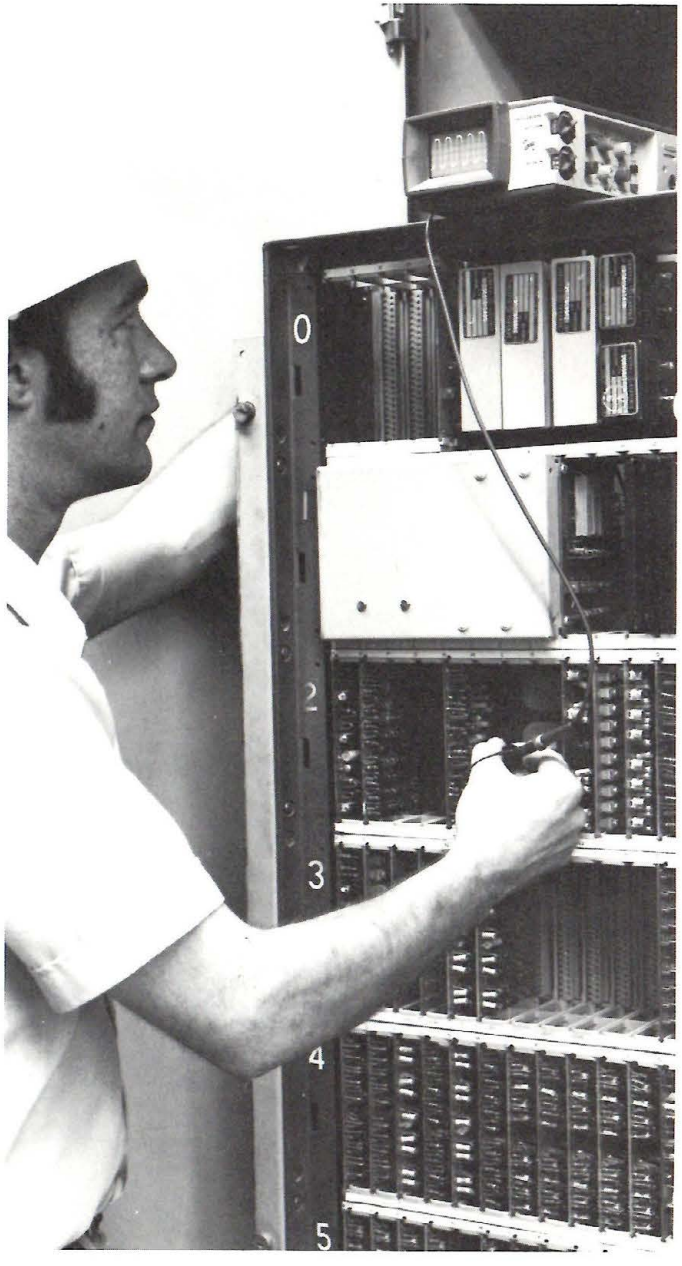
1. *Electronics industry increase.* The computer business is just one example. Demand for our portable oscilloscopes from that segment has never been higher. It's possible that something instead of scopes will some day be used for some of the more-routine computer troubleshooting (and likely, too, that some of *those* products also will come from Tektronix). But, more than balancing that possibility is the tremendous growth in numbers of computers or computerlike things. (The mechanical cash register is on the way out; the point-of-sale terminal, on its way in.) With the advent of less and less costly microprocessor chips, the computer business is bound to be in for great and explosive change.

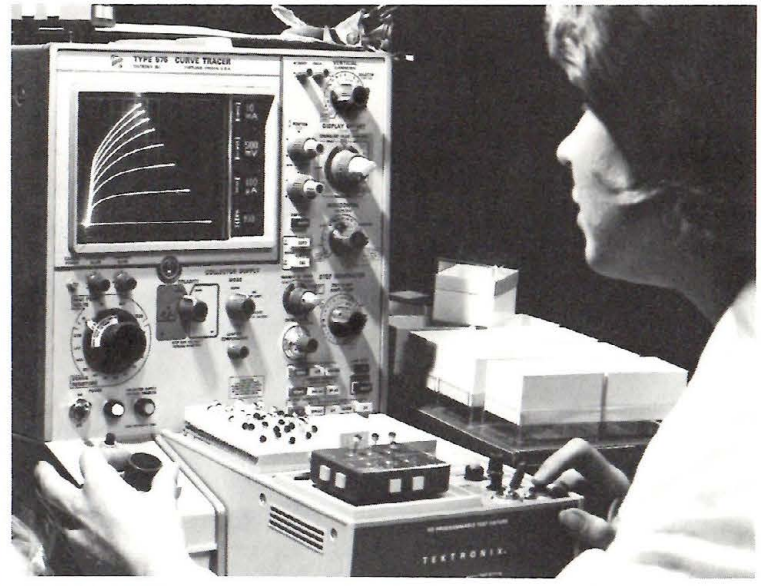
2. *Pervasiveness.* Intrusion continues unabated into hitherto non-electronic areas, such as automobiles: Electronic ignition, fuel-injection, anti-skid brake systems . . . Detroit, which is going through what you might call boom-free times, looks forward nevertheless to *increased* use of instrumentation.

3. *Growth in non-electronic customers.* The virtuosity and precision of electronic measuring tools are increasingly in demand for design and testing of non-electronic products, such as auto engines. The foreign car that plugs into a computer for diagnosis is being checked for mechanical as well as electrical defects.

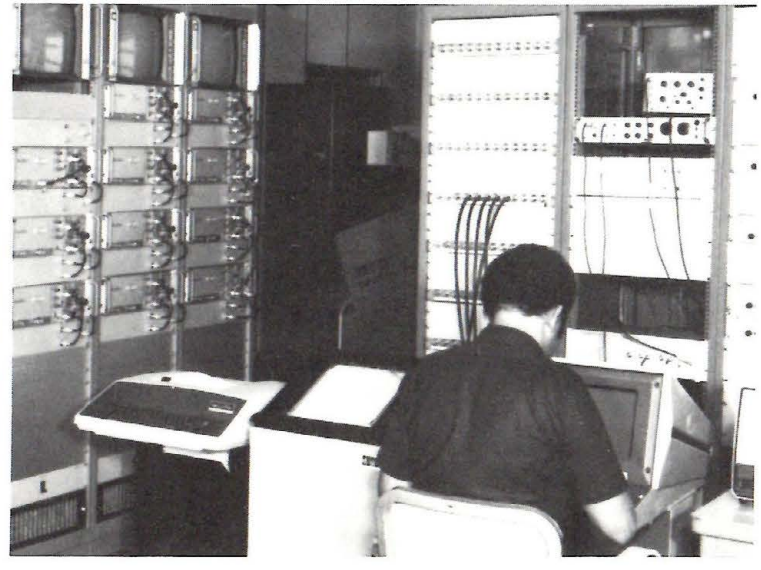
WHEN SOCIETY'S analysts aren't busy detecting a "revolution" of this sort or that, they often call our attention to "explosions" of one variety or another. Among

THE SCIENTIST OR ENGINEER now has additional "brainpower" right at his desk, with the Tektronix 31/53 system.





MINISCOPES (left) are just the thing for many service operations. Curvetracers (above) are a specialized system to test ICs and other semiconductors. A rackful of R7912 transient digitizers (left, photo below) plays a key role in nuclear research.



them you may recall the Cultural Explosion, the Population Explosion and surely the Information Explosion. The last term refers to the exponential increase in the amount of knowledge available to governments, institutions and Just Folks.

Whether or not we're inundated by knowledge, it's certain that we're swamped by *data.* Facts, figures, statistics, words, numbers and measurements are spat at us daily as fast as computers can spit. That's fast. It would take more hours than we have, just to absorb all this material, much less derive meaning from it.

A growing need today is to make sense of all these raw bits, to convert *data* into *information.* ("Data crunching" is a phrase increasingly in vogue.) Electronics, the information science, is a prime beneficiary, and admittedly a prime cause, of this expanding effort.

NOT EVERYBODY CHEERED when the talk began of a coming Electronics Revolution. To many, electronics was a war-spawned activity, typified by a lot of strange-looking boxes, culminating in the computer. And that was a sort of spooky contrivance, so superhumanly smart and all. Not to mention offensive, with that "Don't fold, don't spindle" bossiness.

Probably one reason the "revolution" has come about without great objection is that there isn't much of Dr. Strangelove about the electronics in our lives, which tend instead to be of a benign and even friendly sort. Television broke the way; then came transistor radios; automatic camera shutters; typewriter keyboards that won't jam; and the toy-organ singsong of your phone call being electronically switched to Aunt Minnie in the Midwest, by nobody at all.

Hardly a segment of our lives is now untouched by electronics—not to mention every major area of technology. And where electronics goes, there goes Tektronix—usually in the forefront, for the measurements must precede the advance.

No single factor has brought about this spread of electronics. But a major one has been the adoption of solid-state semiconductor devices in place of vacuum tubes and wires. They're smaller (and smaller), they use less power (important in these energy-conscious times), they last longer and they're more reliable.

But, most of all, they keep costing less. Otherwise, color TV, for instance, would never have become a household presence. (Would you have bought a ballpoint pen for $18, its original price? Maybe; but if you'd waited a year or so, you could have gotten one free with 10 potato-chip sacks.)

LIKE THE FACE of society, the face of the clock is being changed. The long-familiar hands and dial may fairly soon become a historical curiosity. The electronic digital watch, with its lone moving part, is certain to become universal; the digital clock is already coming down in price.

Basic research is unceasing, in many, many advanced technologies: Laser physics, for communications, medicine and industry. Ultrasonics, promising both painless dental drilling and threadless sewing machines, which weld the fabric with sound waves you can't hear. High-temperature physics, seeking to use the ocean's heavy water to create an almost-limitless energy source . . .

Automobile owners will in short order see electronic ignition and fuel injection as old-hat; and the passenger will not only ride more safely (through collision-avoidance systems) but also more entertained (by higher-fi car radio). One proposal would even let a driver compare his performance against a computer-stored "good driver" profile.

Concern over living safely and healthily will bring about increased electronic monitoring of noise levels, and of radiation.

Advanced hotel-security systems will seek to foil intruders by substituting disposable cards and a computerized sensing system for keys and locks.

Medicine is increasingly electronic. Even nations where the unfortunate many go hungry have modern instrument-equipped hospitals for the lucky few.

More and more measuring is

done electronically, whether the thing measured is electronic or not. The more complex the product or system, the more likely it will demand sophisticated measurement such as electronics offers.

KIDS IN SCHOOL, from the early grades on, are becoming comfortable with computers—even "talking" with them on terminals such as Tektronix provides—and with video communications. They'll graduate with the (correct) expectation that these will be the tools of life—a crop of graduates that may make those of us over 22 feel as obsolescent as those of us over 30 admittedly are.

IF MORE AND more technologies will be relying on electronics —and they will—they're going to need a lot of help. One problem is to provide instrumentation and other tools; we're part of the solution to that one. The other is to provide the expertise.

The answer may lie partly in the rise of a new middle-man function: The "systems house." These companies neither design nor produce electronic equipment, but they know both its use and the unique requirements of a particular application. Some of these companies are quite small, specializing in systems work; some are very large, with systems only a part of their activity.

Tektronix has seen the rise, in just a few years, of a growing number of systems houses, who buy our display and measurement products and combine them with others into custom systems for unique uses.

Turbine analysis hardly existed two years ago; now we count five companies, customers of ours, who do nothing but that. A dozen or more serve the lumber industry; others provide systems solutions for vibration measuring; rotation-machinery analysis; non-destructive ultrasonic testing, in shipbuilding and nuclear-power plants; patient monitoring; noise-level identification; nuclear monitoring, and chemical and physical measurements in the booming field of analytical and scientific instrumentation.

Systems houses benefit both the user and Tektronix. For him, they solve a problem that often can't wait, without his having to maintain an expensive crew of electronic experts. For us, they extend our own experienced field-engineering staff, serving applications too specialized for us to spend time becoming expert in.

SOMEWHERE BETWEEN "very good" (the words used in last year's report) and "excellent" (which implies that nothing went wrong), there probably is an adjective to describe the year recently ended.

Tektronix business showed its greatest increase in over 10 years. Not since we've been preparing these reports for you have we seen this kind of growth in sales. Stateside and abroad, across our wide product line, spanning the diverse gamut of customers, demand increased. We couldn't keep up (a fact we're not especially proud of).

Consolidated *sales* came to $271,428,000, up from $202,855,000 a year ago—an increase of 34 per cent. *Incoming orders* totaled $297,255,000, a 28 per cent gain from $232,043,000 a year ago. *Earnings* were $21,353,000, compared to $16,739,000, and *earnings per share* $2.47, compared to $1.94, increases of 28 and 27 per cent, respectively. Figures for both years include those of The Grass Valley Group, Inc., a February acquisition.

TO MANY USERS, "oscilloscope" has come to mean "Tektronix." That pleases us; the trouble comes with the corollary: "Tektronix" means "oscilloscopes." Our long reputation as world leader in that field may blur the substantial achievements made in other product areas.

Evidence of successful product diversification is seen in this year's dramatic growth of two non-scope areas: Information-display and TV-related products.

Other recent diversifications, such as the new TM500 series of instruments, also showed particularly strong growth, although they account for a smaller portion of company sales than information-display and TV products.

Our measurement and display

THE OSCILLOSCOPE, most important and most common electronic instrument, draws a graph of some electrical "event" —or of any phenomenon converted to voltage—so you can measure the event's amplitude and duration.

It produces its graph by "writing" with a focused beam of electrons on the screen of a **cathode-ray tube** (CRT), essentially a bottle with the air pumped out. This electron "pencil" is accelerated to great speeds and fired against the sensitive phosphor screen, lighting the spots it hits.

The beam's repetitive, uniform, left-to-right movement is controlled by the **time-base generator,** from speeds as "slow" as seconds to under a hundred-millionth of a second; then, the moving spot looks like a solid line. The wider the range of speeds at which the beam can "sweep," the greater variety of waveforms you can look at. On most of our oscilloscopes, the fastest sweep is several hundred million times more rapid than the slowest.

The beam's up-and-down movement, depicting the changing voltage measured, is governed by the scope's **vertical-deflection system.**

The CRT screen is ruled off like graph paper; you can make each vertical and horizontal division represent however much or little voltage and time as you say.

The number of vertical divisions the spot moves tells signal voltage, thus the amplitude of whatever the voltage represents. The graph also tells whether the voltage is changing positively or negatively, the waveform's shape and duration.

Phenomena that rapidly and regularly repeat produce a stable image on the CRT. **Storage** oscilloscopes can also graph events that happen slowly, randomly—or once only, like a fracture or explosion—by retaining the image of that event on the phosphor screen.

Oscilloscopes differ widely. Some use interchangeable **plug-in units** to vary their ability to acquire signals. Most plug-ins are part of the scope's time-base or its vertical-deflection system, controlling either the left-to-right or up-and-down beam movement.

Most vertical plug-ins can either amplify small signals or reduce larger signals so they may be graphed. Others let the scope draw more than one graph at a time. Still others do arithmetic, either comparing two points in a circuit and presenting the voltage difference to the CRT, or canceling out a large unwanted voltage segment and expanding the small portion you want to look at.

Horizontal plug-ins (that control horizontal deflection) let you widely vary the beam's range of sweep speeds. Some plug-ins delay the waveform until the desired signal segment occurs, then trigger a second, faster sweep that fills the screen with that segment.

Other plug-ins enable the scope to perform **spectrum analysis** by converting from a time-base to a frequency-base display. Some are **counters** or **meters,** that digitally measure current, voltage, resistance, temperature and frequency. Some picture an electrical change that occurs too fast for conventional scopes (faster than the speed of light, for example), by **sampling** successive bits of a repetitive signal and reassembling the samples into a graph of the waveform.

Some scopes offer **readout** (many of ours on the CRT screen) giving signal information in numbers and letters as well as waveforms.

Some scopes are **portable** (photo), optimized for easy carrying-about. We even have some small enough to be hand-held while in use.

And some advanced models now have **"intelligence"**—integrated computer power.

products, led by oscilloscopes and also including TM500, monitors, automated test systems and spectrum analyzers, represented over 80 per cent of company sales.

The current Tektronix product line is the strongest in company history; that's our belief. The results above seem to bear out that belief.

IF ECONOMISTS have a term for freaky, this was the year to use it. The odd combination of economic factors has had few historic precedents. In the U.S., unemployment was up, Gross National Product turning down; plant and equipment expenditures up, housing down; interest rates and savings, both up; stock market and consumer spending, both down.

Overseas, many national economies were having tough enough sledding that worriers began to forecast a global recession. As if galloping inflation weren't enough to fret over—16 per cent per year in Italy and Britain and 24 per cent in Japan—the worldwide petroleum shortage severely retarded the industrial output of former customer nations.

Then there's the turmoil of currency fluctuations that, for reasons beyond your control, can make your company look, overnight, dramatically better or drastically worse on paper. A nuisance at least; at most, enough to rattle even cool financial heads.

For example, we had to live with a $1.6 million swing—or about 15 cents per share—from artificial gain ($600,000) to artificial loss ($1 million), just in the space of a year.

In the face of all this, to explain why Tektronix has done so well both here and abroad would be to pretend more insights than we have. Maybe some people *are* indexing inflation into their habits—buying today because things will cost more tomorrow. Maybe in tight economic times there *is* no money for big-ticket items; some say so. Others say there's money *only* for big-ticket items. Who knows? We can merely recognize that a new mix of economic factors exists. To what degree they affected our year's performance isn't clear; but probably, in some ways, they did.

DESPITE THE strong U.S. market, International business held at 40 per cent of our total. Orders exceeded our optimistic forecast, and business was good pretty much everywhere, for different specific reasons in different countries. In Australia, for instance, the color-TV boom helped; in Eastern Europe, our increase was partly due just to having learned the ropes of interrelating with a socialist economy.

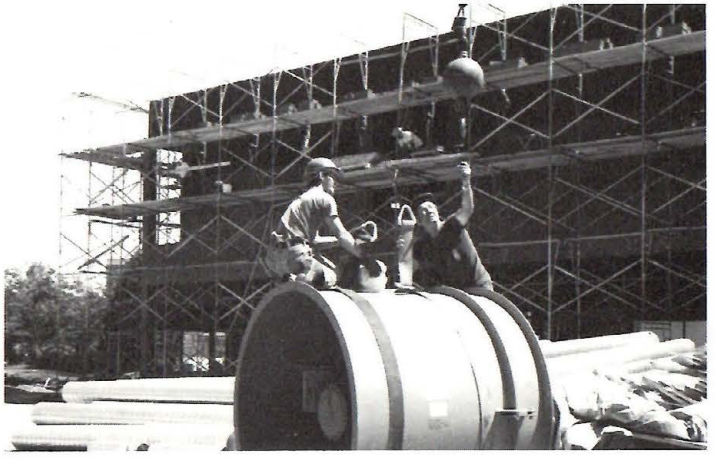
In lesser Tektronix market nations, business was up. Although these countries are small customers, they're growing; and each has a solid core for technological expansion. (It's worth noting that the most recent member of the global nuclear club is India.)

IF THE YEAR'S increased output to meet the surging order input was indeed, as someone said, "a game of Catch-up," then we lost it. Despite a hefty 50 per cent increase in output (even more in component and support areas, with integrated-circuit production quadrupling), we had 42 per cent more unfilled orders at year's end than at year's start. We had even more by June 30—a record $80 million worth, a cushion that's no longer comfortable.

Part of the problem has been an order rate higher than anticipated (although last year's annual report ended prophetically enough by stating: "Things may be even better than they look"). Also we were hampered by some lack of space, and by the same kinds of material and parts shortages that other manufacturers faced.

Whether slow deliveries have or have not hurt business probably depends on whether you're a Manufacturing person, who watches the unfilled orders piling up, or a Marketing man, who sees unplaced business as opportunity lost. We've seen a few order cancellations due to delivery delay. So that we won't see more, our operating plan for the coming year calls for improved delivery.

The way things are booming along, that will take some doing. But we're determined. □



ONE MEASURE of Tektronix' commitment to the future is bricks, masonry and structural steel.

From headquarters to the field, from our California subsidiary to the one in France, Tek is engaging in a building program designed to add nearly a million square feet to our already over three million square feet of space.

Completed this year, under way or approved are 11 buildings.

AT BEAVERTON — A 200,000-square-foot multi-purpose building (photo above) will be occupied this fall by our Communications and Systems divisions, plus some other engineering functions.

"Up and running" is a modern 100,000-square-foot Distribution Center, for our order-processing and finished-goods warehousing.

Beginning to take shape is an 88,000-square-foot addition to our Metals building, to be used for manufacturing.

That, after about 16 years, brings us to where we can foresee outgrowing our 300 acres of industrial parkland at Beaverton.

AT WILSONVILLE, less than a half hour away—On our newly acquired 254-acre tract, the second Tektronix Park has begun to take shape. Ground has been prepared and construction begun on a two-building 250,000-square-foot complex (model above). First occupants will be from our Information Display division, including calculator engineering and manufacturing.

We're very happy with Wilsonville. It's a fine place to live. The site is attractive; the location, on the freeway 17 miles south of Portland, is excellent; and all necessary utilities are available. The community is progressive, and has a positive attitude toward Tektronix.

AT GRASS VALLEY, California —A 28,000-square-foot building has been approved, to accommodate expansion of our new subsidiary, The Grass Valley Group, Inc. It will house assembly activities.

OUT IN THE FIELD—Field service centers have either been begun or approved at three locations, to consolidate scattered marketing offices and provide improved service to the growing markets of the Dallas, Chicago and San Francisco areas. Total space is 63,000 square feet. In addition, board approval has been given to acquire sites near Boston and Washington, D.C.

AND ACROSS THE SEA — In Paris, Tektronix France will construct a 50,000-square-foot sales and service building, with completion hoped for by summer.

TEKTRONIX television instruments are essentials in almost any TV studio.

Reading the clear directions

IF THE MORNING headline read *"Men Land on Mars,"* one thing is sure: People would believe it. So advanced has technology become that very little seems impossible any more, and you can't tell the mad scientists from the sane ones without a scorecard.

So it's hard to predict the future. Still, several trends were evident the past year that seem very likely to continue having special importance to Tektronix business (both as to how we build products and to the nature of our markets).

Integral with them all are (1) the growing pervasiveness of electronics into areas where the electron once feared to tread, and (2) the growing need to extract information from data.

1. It's necessary to build more *"intelligence"* into products. The miniature microprocessor chip is a sign of the times—pointing toward more powerful, less costly, far more available computing ability.

2. To feed the growing abundance of data processors, there's a need for measurements in *digital form,* since that's what most computers use.

3. Single-purpose products need to be increasingly combined into multifunction *systems,* that may include: Acquiring data; processing it to extract answers and solutions; displaying the result and, sometimes, using it to control processes.

4. There's more and more demand for *graphic displays.* Often the only way to make sense of a jumble of data is to present it pictorially.

5. The need for *portability* will grow. The more electronic "built-ins" there are — in homes, cars, offices, machinery — the greater the importance of small, lightweight servicing tools for the fixers and maintainers.

6. A timely one: Many nations this year were jolted awake to the importance of *energy self-sufficiency.* This technological race against time will require more instrumentation, and new kinds.

Some of these trends are not new; others are. But all appear likely to continue tomorrow. And in each of these growing areas, Tektronix already has a leg up, with products ready *today.*

CONTEXT I: Brainpower

TO THE EXTENT THAT "intelligence" connotes judgment, then no instrument will have very much of it very soon. But that's the word chosen to describe computerlike functions incorporated into products or systems.

The real intelligence is the brainpower that goes into their design. Some of it becomes built in as part of the "hardware," but more often as software, or written programs; sometimes, now, it's in firmware, fixed programs incorporated into the device. (Software has been likened to sheet music, or a player-piano roll; firmware, to the wash/spin-dry routine embodied in a washing machine.)

"COMPUTER", never a well-defined word either, is even vaguer now.

In a supermarket, a coded package is scanned by a wand-like device that sizes it up as hamburger, at so much per pound, adds the price to the bill—and removes that item from the store's inventory. (Someone still has to sack the groceries.) Is that device a computer, or something else with no generic name as yet?

Solid-state microcircuitry will eventually enable low-cost addition of computerish functions to just about *anything* where an extension of human intelligence would be helpful.

They'll do a more significant thing. Now, to program a computer, you must use one of several special "languages." COBOL and FORTRAN, for example, which

WHEN MAN interacts with a computer, it's often through a **terminal,** which provides him a way to put in information, or take it out, or ask questions and look at the responses.

Most terminals insert coded information from a keyboard and get word-and-number (alphanumeric) answers, on a picture tube or paper.

To this capability, most of our terminals add **graphic** attributes. They let the user interact with pictorial material—charts, diagrams, maps, graphs—often more meaningful than alphanumerics.

Our storage CRT holds the computerized information in place while it's looked at. The user's input is made on a keyboard, or with devices that let him "write" on the screen. He can then change the display or enlarge part of it.

Related products include **hard copiers,** which quickly make paper duplicates of the CRT screen contents, and **display monitors,** which receive and picture computer output in a variety of ways.

sound like nasal decongestants, are intermediate steps between English and the binary (on-off) signals the computer understands.

Translating into programming language is necessary now. But, as electronic hardware grows smaller and costs less, much of the translation will be done by the circuitry. The user then can employ "higher-level" languages, such as math and English. That means programming will then no longer be the privilege of a few, but of many.

THE DRAMATIC advances in LSI circuitry provide a primary market for Tektronix, for its design and testing; and a secondary one, by accelerating the spread of electronics into new areas; plus a new component capability to use.

Microprocessors won't instantly revolutionize our products. For one thing, the "micro" field is far from stabilized; with prices still dropping and performance still increasing, it's wise to bide one's time and wait for the "right" devices. Secondly, analog instruments such as oscilloscopes have not been large users of digital chips, although we do use microprocessors now in our calculators, TV switchers, terminals and digital processing oscilloscopes (DPO).

As a market, semiconductors has always relied on Tek scopes; curve-tracers; and automated test systems for microprocessors (and other ICs, including LSI memories).

The need to interact with intelligence is also expected to impact our graphic terminal sales.

TO OUR TRADITIONAL areas, display and measurement, we've added a third, intelligence. This has been done in two ways: By including programmable calculators in our product line (and combining them with other Tek products in a variety of useful systems) and by developing the first (and only) intelligent oscilloscopes.

Calculators: Our programmable calculator sales are just about on schedule, and user feedback is excellent after their first year in a market that's large but dominated up to now by two other companies. Ours stack up well against competition, and for many applications offer a better value than the more costly and complex minicomputer—doing many of the same functions for less money, in the user's own personalized setting, his office or workbench. And use of their math keyboard comes naturally.

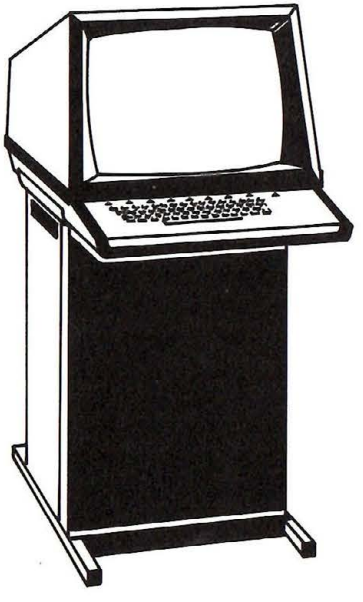
Our calculators (not the pocket variety) offer high performance and competitive features, at a price advantage—the old-fashioned kind of virtues. "Plain vanilla," our IDD manager calls them. Lest that sound deprecating, think: What's always the most popular ice-cream flavor?

Computer-mated oscilloscopes. The advanced R7912 and DPO are alike in that they both acquire electrical signals; store them (the R7912 offers the world's fastest

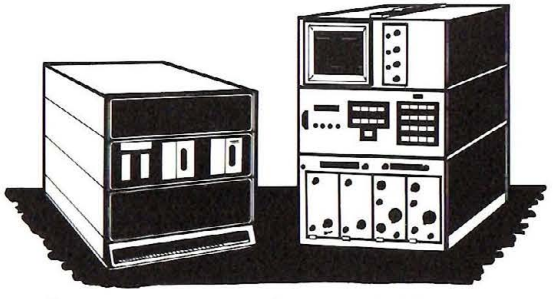
In instrumentation, tomorrow is today

A good part of the instrument business is foresight: Sizing up coming trends and staying ahead of them. Major directions that will shape our tomorrow are being served by Tektronix products **today.**

GRAPHICS—Tektronix pioneered low-cost graphic terminals; largely as a result, graphics is now seen as the logical "next step" in terminals. Our strongest such product this year was the immensely popular 19-inch 4014, with unequalled information-display density.

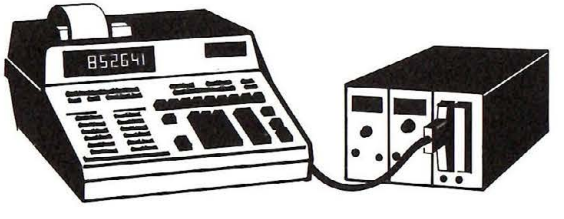


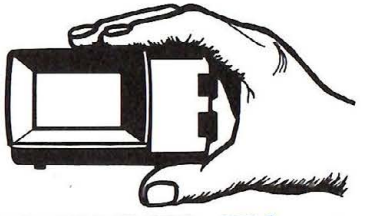
INTELLIGENCE—Computer power may be the logical "next step" in oscilloscopes, as more and more users seek to derive information from data. The world's only "intelligent" general-purpose oscilloscope (one with integrated computer power) is our DPO.



DIGITAL MEASUREMENTS—The precision of digital measuring is being increasingly demanded, particularly as computerlike logic functions are built into other systems and products. To change waveforms into digits for a computer requires an analog-to-digital converter. The world's fastest, by far, is our R7912 transient digitizer (at right).

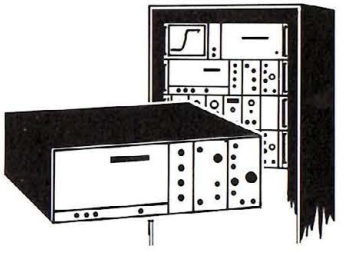
SYSTEMS—The need for answers and solutions will lead to more interrelated product systems, that acquire data, process it, display it, measure, control. . . . One such is the 31/53 desk-top calculator/instrument system:





PORTABILITY—With more and more electronics built into equipment, the need will increase for instruments that can be carried to the measurement. We have a very wide line of portables, including the world's only laboratory quality miniscopes.

ENERGY RESEARCH — The desire for energy self-sufficiency will spur research into new areas and old. Tek oscilloscopes will continue to



be basic research tools; the R7912 (above) is an irreplaceable product in nuclear research; and our terminals are increasingly popular in oil and geothermal exploration.

storage); convert them to digits for a computer or Tek calculator, and display the resulting waveforms.

They're unlike in some ways, too. The DPO has a conventional cathode-ray-tube display; the R7912 uses a scan-converter CRT, whose electrically written image is invisible; it must be read by another electron beam and converted to a display on a scope screen or Tek video monitor. The R7912 is fairly specialized, designed to capture very fast events, down in the subnanosecond area — those lasting less than a billionth of a second, or about the time it takes light to travel one foot; the DPO, by contrast, is a general-purpose oscilloscope, plus.

Neither is inexpensive; yet both have had good response—the R7912 from markets such as computer fast-pulse work and nuclear research, where fast transients are important to know about; and the DPO from the innovator segment of science and industry.

Analysis of user feedback will let us fine-tune future generations of "super" scopes, as we continue pioneering the exciting new area of computer-enhanced oscilloscopy.

CONTEXT II: Digits

DIGITAL COMPUTERS can do marvelous things if you talk to them right. And, on the surface, what could be simpler than computer "language"? Its words are

made up of on-or-off *bi*nary dig*its* ("bits" for short) with a base 2—compared to our decimal system's base 10.

(If the idea of base 2 seems strange, think of the dot-and-dash Morse code as a base-2 "language.")

Anything digital, in computers as well as in a growing number of other applications, uses this on-off kind of circuitry.

Computers are ever more ubiquitous—not only as stand-alone superdatacrunchers but also in mini and now micro versions built into other systems or products. As digital circuitry continues to become cheaper and more trustworthy, you'll see it more and more. Today, in information handling and in machine or process controls; tomorrow, in the innards of TV sets (although their output is analog; that is, pictorial).

So a growing need for instruments is greater digital capability. First, to accept *input* not only of computer "words" but also of other digital events such as electrical pulses; second, in providing that kind of *output*, either for the user to see (like the readout on a voltmeter) or "digital talk" for a computer to understand.

With many years of digital experience under its belt, Tektronix is well on the way to meet the growing needs of the service market for that kind of capability.

One advantage of analog products, like oscilloscopes, over digital ones is that they produce a "truer"

AMONG THE MINOR but persistent difficulties in our **systems** activity is defining the term.

Capitalized, it describes one of our four operating divisions and its product line. Uncapitalized, an instrument "system" is harder to pin down.

Our division manager sees a system as any integrated combination of products that could also function singly—to acquire data; or to perform measurements; or to provide control; or to process data; or to produce a display or other output.

Tek's experience with systems goes back a long way. The first oscilloscope did one thing—allowed the display and measurement of electrical waveforms. Later came plug-in versions, still scopes but much more versatile ones. But with addition of plug-in counters, meters and spectrum analyzers (stand-alone products elsewhere), the scope itself became a system.

Our new TM500 series of instruments was designed as a modular system, and expanded this year by interfacing it to a Tektronix calculator.

The Systems division has two basic products: Signal-processing oscilloscopes; and automated test systems for integrated circuits.

"Smart" scopes — Introduced last year, our digital-processing oscilloscope (DPO) and the R7912 transient digitizer added an unprecedented dimension to oscilloscopy: Intelligence—the ability to computer-process the acquired waveform and extract useful information from it.

The DPO is an instrument sandwich—a high-performance 7704A oscilloscope "sliced" horizontally, with a processor inserted between the plug-ins and the CRT screen to interface with a minicomputer or a Tek calculator.

The R7912, more specialized, was designed largely for acquiring very fast random or single-shot waveforms, and converting them to digits for computer "massaging."

Both these pace-setting products employ computer power to extract information that often otherwise would remain buried in the waveform. They're bound to be both emulated elsewhere and followed here by more advanced versions, spurred by the reduction in size and cost of computing ability.

Automated systems—This category includes our biggest and most expensive product—the S3260 (one quarter million dollars, and up). It's designed to test one of the smallest electronic units, the integrated circuit. (See page 28.) We also produce less complex test systems for specific kinds of ICs, such as memory chips.

Our Systems people use the Tektronix catalog (and those of other companies) as a shopping list.

AMONG THE GIANT steps technology has taken, hardly anyone would bother to list that prosaic, often dusty, yet companionate piece of furniture, the TV set. Yet it belongs on such a list. By now we take television quality for granted, so much so that, when the moon is brought right into our living room from 239,000 miles away, we complain if the color is a smidgin off.

Nobody likes a good TV picture better than Tektronix, for part of our job is to help make sure it's sharp and clear. Since the youthful days of television, we've kept a jump ahead of that industry's needs for instruments to monitor and measure transmitted video-signal quality. Those products are standards in all TV systems throughout the world—black-and-white, color, closed-circuit, cable.

After the original scene is photographed, the resulting signals can go astray at hundreds of places on their way to you. If those errors aren't caught and corrected, your picture at home might well resemble those on much-abused motel TV sets, which give you the feeling you're watching something that's taking place during a sandstorm.

Tektronix products improve video transmission quality in several ways. They include **signal generators,** which make sure the video signals are synchronized, or which produce patterns and signals allowing identification of even the smallest transmission flaws; **waveform monitors,** which enable detailed waveform analysis of TV picture signals; **picture monitors,** which allow quality measurements to be made while the TV image is being viewed; **vectorscopes,** which produce circular graphs of transmitted color video-signal components; and **controlled-correction amplifiers,** which rectify color-transmission errors.

New to us this year, with acquisition of The Grass Valley Group, Inc., are **production** and **routing switchers.** The production switcher is essentially an editor. Used in the studio, it takes a number of video sources and—through fades, cuts, dissolves and special effects—composes the program you see. A routing switcher has a simpler job, switching a video input from one location—a news pickup, for instance—to studios or the network.

depiction of things as they are. We perceive the real world as a continuum, not a series of data bits. But with Tek's marriage of computer (or calculator) to oscilloscope came the need to convert analog to digital information. This process is done by (ready for this?) an *analog-to-digital* (A-D) *converter.*

The pace-setting instrument in this regard is our unique R7912 transient digitizer, about 30 times faster than the next fastest. It gives the user the ability to capture extremely fast one-shot electrical events and convert the waveform to digits for computer processing. It's selling well into fields where high-speed transients are commonplace.

Other Tektronix digital products run the gamut from calculators to counters and meters, the latter two as plug-ins for our TM500 modular series and for both major lines of laboratory scope, and, recently, as a digital timer/meter "piggyback" for our high-performance conventional and storage portables. Our DPO, graphic terminals and automated test systems all must talk to computers also.

Two recent, more specialized, products are the DD501 digital delay, for our TM500 series, and the 821 "word" generator/recognizer. Both do the same sort of thing: Let a user examine the exact portion of, say, a computer memory disc that he wants to look at (in the same way that you might want to put the stereo tone arm down on a

particular verse of a particular song on a long-play album).

The DD501 triggers a scope after a predetermined number of digital events have occurred; the 821 (also useful alone) triggers it after the occurrence (or non-occurrence) of a particular digital word. Both may operate in a "baby-sitting" mode; that is, unattended; and fire a storage oscilloscope to hold the desired digital data to look at later.

CONTEXT III: Systems

LIKE MANY another instrument company, we perceive ourselves as being in the solutions business.

Our mission is not to provide products, but answers. This means a keener-than-ever awareness of what the end user is about and, often, the creation of inter-related product systems that will yield the solution he needs.

As a broad generality, single instruments tend to have single (or at least limited) functions. Oscilloscopes are among the exceptions, containing both measurement and display capabilities.

It's unusual for all the typical systems functions to be put into one monolithic product. It would most likely be so locked into a particular narrow use that it would justify only low-volume (and thus high-cost) production; or else, it would function only marginally, just as a one-man band is unlikely to have much real musical depth.

SOPHISTICATED THINGS keep replacing simple ones. As just one example: In many of our urban areas, traffic lights, formerly controlled by timer motors, are now part of computerized systems that include sensors at key intersections. Based on the resulting measurement of traffic flow, signal timing is regulated, so you won't have to stop for a red light when the cross street is empty.

These and many other kinds of systems may require numerous and varied data inputs; a means of measurement and/or control, and, often, some type of useful output.

This report referred earlier to systems houses, without mentioning that we're one. Not only in the very specialized area of integrated-circuit testing, incorporating products besides our own, but in a variety of others that use only ours.

We have two strong advantages:

1. Tektronix-made "components," including the world's best oscilloscopes; versatile graphic terminals; calculators; cameras . . .
2. Broad and deep experience in test and measurement technology.

As a systems house, we see a very promising future.

"SYSTEMS" MEANS just about whatever you like. Generally, instrumentation systems include some sort of data or signal acquisition; some form of non-human "intelligence", and some type of display or more permanent output.

Tektronix systems range from

WHERE A CALCULATOR ends and a computer starts is getting harder to say.

Like a minicomputer, Tektronix calculators are programmable; that is, you can give them not only a problem but also instructions for solving it, and get the answer at the touch of a key. They have the processing power of most "minis," but less speed, storage—and cost.

A mini is often shared by many users. Our calculators are personalized desktop instruments. To use a mini, you'd need to learn programming language. You address your Tek calculators on a keyboard, in math language, just the way you learned it in high school (or even grade school); the output is displayed or printed on tape.

Although our keyboards cover the entire range of mathematical functions, the user may overlay them to customize the instrument to whatever special functions he needs. Thus it easily converts into a statistical calculator, a graphics calculator . . . You choose.

PASSING EVENTS IN BRIEF

• As to our long (1961) suit against the US government: The less said, the better.

It's pretty much same song, 13th verse. We won the suit three years ago, when the Court of Claims agreed government contractors had infringed Tektronix patents. What's going on now is figuring what that infringement is worth. The government and we are still far apart on that one.

• The Grass Valley Group, Inc. became part of Tek in February.

The California company is small but well integrated, with a product philosophy akin to our own. Like Tek, it is the premier supplier of its product line, which is television switching equipment. It operates now as a part of our Communications division; the acquisition was a natural progression of our interest in television-related products.

We plan to add a 28,000-square-foot assembly building on Grass Valley's 325-acre tract, part of which is shown below:

ones you can carry in one hand to those you can't even lift; from low cost to high, and from broad uses to highly specific ones.

They include:

• *Automated test systems.* Used for IC and semiconductor testing, these add purchased computers and peripherals to a core of Tektronix products, in a variety of configurations.

• *Portable systems,* Racked or stacked, or trundled about in a Scope-mobile, or carried to the job in a one-wide or three-wide mainframe, the TM500 modular test and measurement system has won customer acclaim. Its year was one of extraordinary sales growth.

It's small; low-cost; lightweight, and highly versatile. Its products run the gamut of meters, counters, power supplies, amplifiers, generators and monitors—all plug-ins to the power-module mainframe. Useful as a system of its own, or with a scope, or coupled to a Tek calculator, TM500 is unlike anything else on the market. It has one clear advantage over competing products: Its design and manufacture are the responsibility of a single area; thus we can optimize each plug-in to fit the system, and not have to haywire somewhat unrelated products into a less-than-optimum assembly.

By the WESCON show in San Francisco this fall, we'll have 28 TM500 products. And we're just starting.

This broad product array and their easy interfacing make them ideal build-your-own test sets. They're useful in engineering labs and classrooms, for instance, because you can reconfigure them quickly as the curriculum changes —from a physics research system, for instance, to a test-equipment package.

• *Oscilloscope-based systems*— The digital processing oscilloscope and the R7912, both discussed earlier, are state-of-the-art systems, oscilloscope products with computer intelligence. A less-costly DPO interfaces with a Tektronix calculator. The R7912 can use a Tek terminal or TV or storage monitor for display output, and one of our hard-copy units to provide a record on paper.

• *Calculator systems.* The 31 model, besides being interfaced with a DPO, has been combined into two other systems, one calculator/graphics, the other calculator /measurement.

The 30/10 system uses a 4010 storage terminal to display the calculator output, both alphanumerically and pictorially. The calculator may be controlled by either the terminal's keyboard or its own.

In the 31/53 system, the calculator becomes the central processing unit for TM500 digital multimeters and counters. The small, low-cost package, in many cases, makes better sense for researchers and engineers than a minicomputer. It costs less, and is far more personalized; you can use it on your own desk.

Acquired digital data (on voltage, resistance, temperature, etc.) may be logged on paper tape, or subjected to programmed calculations. The calculator can work unattended, doing computations, printing out records, warning or commanding the instruments, summarizing data, extracting statistics or discarding input that's unwanted. All this while you're out for coffee.

Without this system, or a more-expensive minicomputer, the engineer would have to make the measurements, log them by hand, then do the calculations by machine—or manually. Whether the 31/53 makes him lazy or efficient—two ways of saying the same thing—he may console himself that 'rithmetic never should've been one of the three 'R's anyway.

The separation between Tektronix product lines, never distinct, has become fuzzed up even more by the growing systems activity: Graphic terminals in measurement systems, meters and counters in calculator systems.... Recall that many TM500 products began as plug-ins for our scopes? Well, this year we've introduced a new plug-in *for* the TM500. It's the SC501 and it's—you guessed—an oscilloscope.

CONTEXT IV: Portability

As electronics finds its way into new places, it will often be in products that themselves are in some way portable. When your hi-fi turns lo-fi, or no-fi, it can be toted or shipped to the fixit shop; a car whose idle is ragged can be driven in for a fuel-injection check. But a good deal of the new electronics will be in products and installations (appliances, point-of-sale terminals) that aren't handy to move. Increasingly, the portability will have to be in the measuring tools.

"Portability" — there's another one of those words. If it means carryable, then most of our products qualify. It's been some time since anyone but a 97-pound weakling found an oscilloscope, for instance, too heavy. What may be needed is some word progression like portable, portabler, portablest....

Portability has always been part of the Tektronix tradition. Even our original 511 scope was acclaimed for that feature, although most of us wouldn't want to haul it very far today.

We've led the way into portables; then into rugged laboratory-quality models; storage portables (including the world's fastest) and, now, those with integral digital meters, and our unique miniscopes that fit into a toolbox, or into your hand, and weigh as little as 3.5 pounds.

Portability is a major feature of other products, too, including the versatile TM500 test and measurement system.

We expect demand for our high-performance portables to maintain the strong level of the last few years; and look also for continued gains by the mini line. In addition to their handy size and weight, making them naturals for many kinds of equipment servicing, their low cost and simple use help ease non-electronics-oriented people into the scope habit, a habit that tends to spread.

The breadth of our portable products is a sign of commitment: To make it easier and easier to take the tool to the measurement.

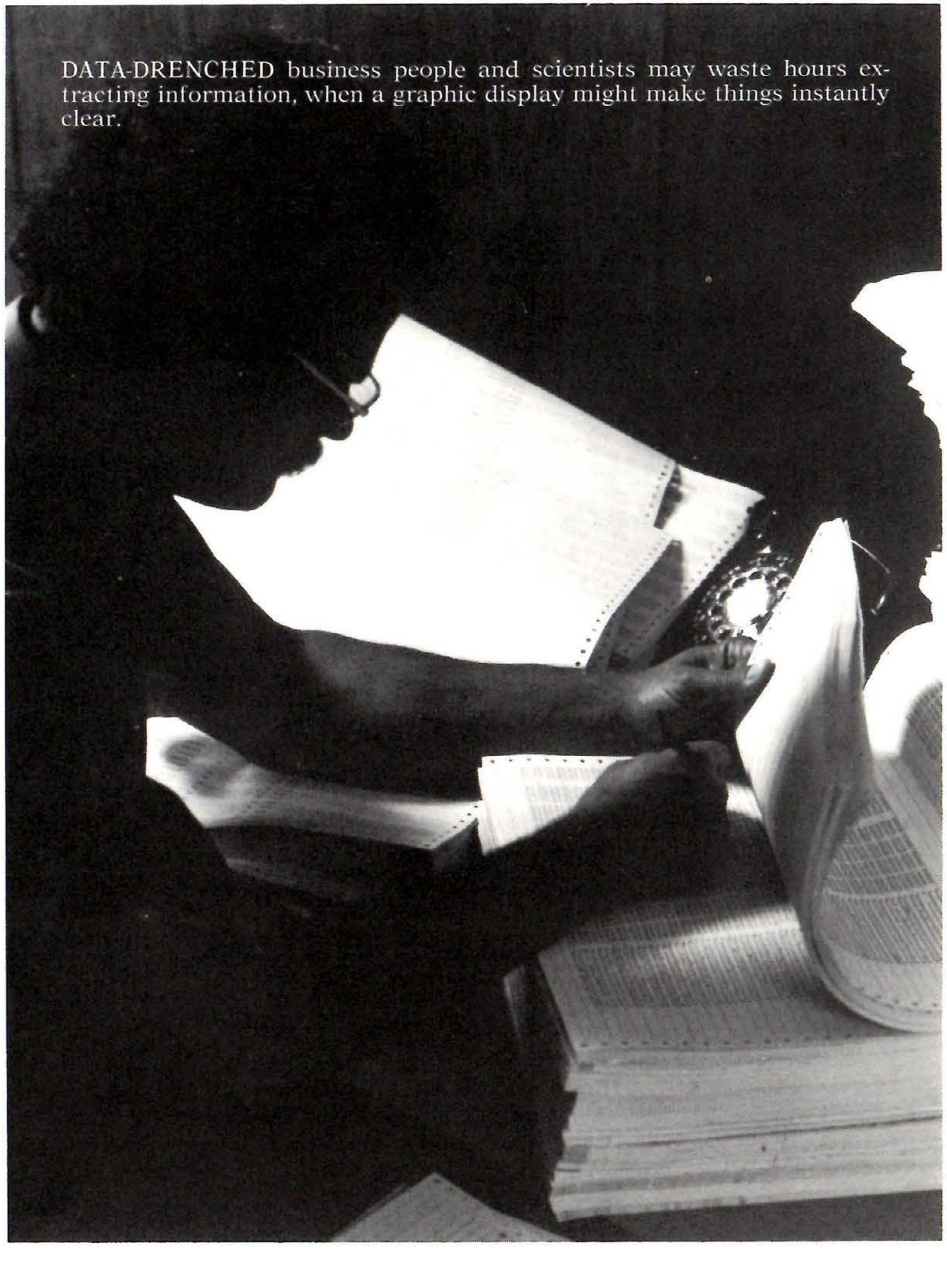
CONTEXT V: Energy

THAT BLUE-AND-WHITE marble 'way off in the distance in the astronauts' photo? Why, that was our Earth, glowing in the perpetual night of Space, just like science-fiction had always said it would: The Home of Life.

Is it only coincidence that, almost from the moment of that photograph, Man began to appreciate his environment? At any rate, there's now growing (maybe just in the nick of time) a global awareness that the treasures of Earth are finite, and must be nurtured forevermore.

Stewardship won't come easy to a race grown to wastrel habits. But come it must, or those resources will be no more. And then what? Well, then that will have been *that*.

FROM HIS FIRST intentional fire, Man hasn't fretted much about how to use energy sources. Just dig more, cut more, pump more and burn or otherwise consume it.



DATA-DRENCHED business people and scientists may waste hours extracting information, when a graphic display might make things instantly clear.

But the whole problem is more complex now. Aside from its world-political and environment-messing-up aspects, there's the plain awareness that we're running out of easy energy.

Oh, there's energy enough around, but in unhandy places or uneconomical quantities or in raw forms (wind, sun) or going up, and up, in price. Coal abounds, but it's costly to transport; you can't push it easily through a pipeline (and, besides, its smoke darkens the air.) There's lot's of oil in shale, and lots of shale in the Rockies, but it awaits some means of extraction short of blowing the mountains up. And, surprisingly, it's still too costly to do much more than "skim the top" off a typical oil field.

THE ENERGY HUNT involves three aspects: Finding more of the fuels we're used to; making better use of the supply that does exist, and harnessing new sources. All involve great technological challenges, not limited to the US. Any country wishing to survive as other than an economic dependent will need to assure its own energy supply.

Oscilloscopes have long been basic tools of physical research, including research into energy. Our computerized DPO will be welcome there, too. Scopes also are popular field instruments in petroleum companies' search for oil; that industry is now also a large user of Tektronix graphic terminals, to

convert acoustical signals from seismic shocks into a cross-section of suspected oil terrain.

The atom may yet yield the ultimate answer to abundant, safe energy, but it will take coaxing. An essential research tool in this area is the Tektronix R7912; for example, to grab and hold one-shot nuclear phenomena zipping along inside particle generators and convert them to computer-digestible digits. The DPO and 7912 both also have potential for automated monitoring of N-power plants.

In the growing and critical search for energy, we'll do our part.

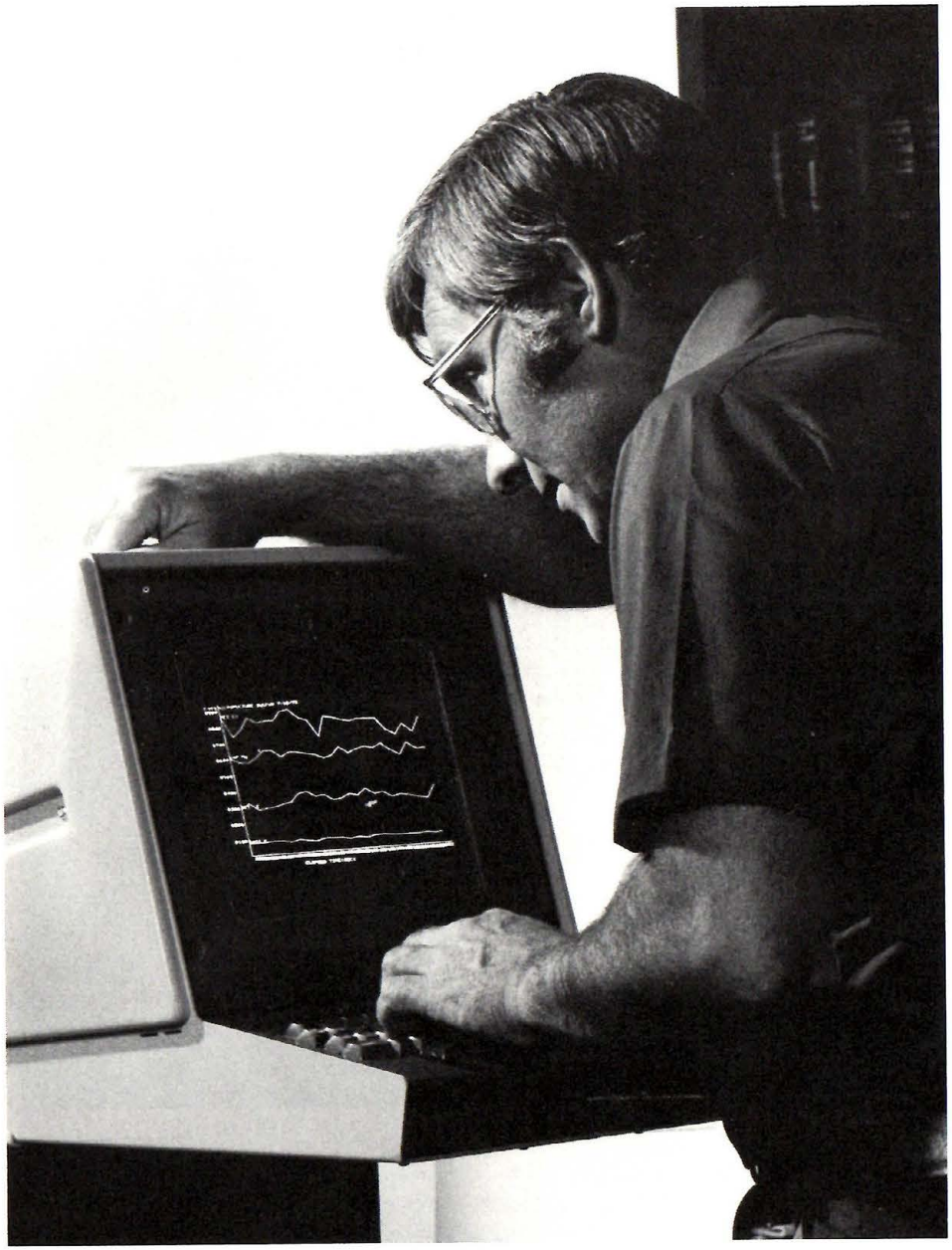
CONTEXT VI: Graphics

AN ENGINEER STARING at a chalky boardful of equations, or a production manager slumped at a desk littered with computer printout, scanning the data for a conclusion, finally reaches one. His conclusion is: There must be a better way.

There is. The better way, as Tektronix has been insisting for several years, is through graphics.

For a time we were almost a lone voice crying that message in the alphanumeric wilderness. But now there's no doubt everyone hears it; this year's National Computer Conference showed that graphics is an idea whose time has clearly come.

"DO I HAVE to draw you a picture?" That familiar sigh of exas-



IT'S TOO BAD, but the energy "crisis" seems to have vanished from the public mind as soon as the long lines disappeared from gas stations. What's left is a dealers' overstock of two-gallon cans and—even for already conservation-minded companies—a strong reminder that the earth's resources are not endless.

(The opportunity for Tektronix products to serve in the national search for new and expanded energy sources is discussed on pages 23-25 of this report.)

Our product—Electronics, putting increasing capabilities into smaller and smaller packages, is inherently conservationist. The move, for example, from vacuum tubes to transistors to ICs to LSI to who knows what? is an excellent example of doing more with less, which is the way we all will have to go. Tektronix intends to continue to do what it's always done—put more and longer-lasting performance into less space with lowered material usage, power requirements—and cost.

Our energy supply—Nor is our industry a large consumer of power, per dollar of product output. What's more, Tektronix' home is the Pacific Northwest; favored with many harnessed mountain rivers, it's one of the nation's fortunate areas as to hydroelectricity.

Our conservation program—Recent focus on energy shortages has caused us to do some things differently; we wonder now why we weren't always doing them. It has changed some of our practices

forever, as we relearn an old truth: Conservation isn't costly, and its opposite is waste.

Our new industrial-park buildings reflect renewed concern over resource usage. They'll be more efficiently cooled and heated, by having fewer windows and using double-pane glass. Localized lighting control and more-flexible heating and air-conditioning systems also will decrease power consumption.

In existing buildings, too, air and lighting systems will be modified for efficiency. Where critical processes aren't affected, our buildings will be warmer in summer, cooler in winter, than they have been.

Through special efforts of just about everybody, our electrical consumption at Beaverton is down 6 per cent from what it was when the year began, despite increases in employee numbers and buildings occupied. Natural gas and fuel oil usage also is down, by about 13 per cent.

Through company encouragement and increasing employee participation, we've seen a growing number of bike riders, car poolers, motorcyclists and walkers-to-work, and a decrease in the number of auto drivers.

Salvage, reclaiming, recycling and scrap sale (of precious metals, solvents, plastics, metal, glass . . .), up more than tenfold in the last decade, now represent a company saving of over $1 million a year, aside from its resource-conservation aspects.

peration points up something important: That often the simplest way to make a point is pictorially. Although scientists are fairly comfortable with graphic information, the business world is just getting used to it, being more accustomed to words and numbers. Also, until recently, the means for easy, low-cost, creative use of graphics hadn't existed.

But no longer. Many earlier techniques have steadily improved, such as video; some exciting new ones are emerging, neon plasma panels among them. Tektronix' major strengths continue to lie, first, in our proprietary storage CRT, which allows bright, sharp, flicker-free, large-screen graphic and "alpha" information displays, all for little money. And, second, in the intimate knowledge of what the end user is up to, and the resulting software skills to help him, that starting early gave us. You have a second shot at some things; getting a headstart is *not* one.

Tektronix is well established as the world's leader in this young but increasingly accepted discipline. This year we added to that lead.

IN BIG LUSTY CHOPS, Tek has cut graphics down in price. A dozen years ago, a graphic system cost $200,000. Terminal makers using Tek-built 611 monitors brought graphics down to $12,000 in 1968; a year later, we took to the field ourselves—and dropped the figure to $8000. Two years ago, we cut the price in half—down to near the alphanumeric terminal range. What was once seen as a costly frill is now accepted as the logical "next step" in terminals.

THIS YEAR OUR big thing was our big tube. The 4014 terminal, with its 19-inch screen, had by delivery time the largest order backlog of any Tek product ever.

It displays up to one million graphic points, or 8500 letters or numbers—about four typed pages worth. That's the highest information density of any terminal. (No, that's wrong. There's a British laser display, costing $186,000, that has us beaten. Foiled again.)

Outside the innovator segment, in a more price-sensitive market, our smaller 4010 sold well.

Ours are storage terminals; in them, the phosphor screen does all the work, holding onto computer-sent information after receiving it just once. The increased appetite for graphics, whetted by Tek over the years, has engendered new competition, some with genuine razzle-dazzle; but other graphic terminals to date still fade, or flicker, or cost a good deal more than ours.

Two major uses of the big screen are mapmaking and computer-aided design (CAD). Five companies dominate the CAD systems business; every one of them has adopted the 19-inch 4014.

In CAD, the terminal is the drawing board. Integrated circuits, which wind up as Lilliputian specks, begin as precise large-scale drawings that require a lot of repetitive geometry. Tedious and time-consuming for a draftsman, it's an ideal chore for the computer, known for its speed and patience.

Mapmakers also need high-resolution graphics. The U.S. government will geo-code all its 1980 census information, hitherto kept in words and numbers. Geo-coding will reduce to the same scale all geographic information, which will allow map-like correlations of any census data: For instance, population vs. voting precincts.

In some of our large cities, utility departments are falling hopelessly behind, redrawing map after map after map and still not keeping up with which water and gas lines are under what streets. The 4014 should help a lot, allowing updating of utilities maps at the push of a couple of keys. (A major plus of terminal graphics is freedom from monumental waste of paper.)

OUR HARD-COPY machines, that make paper duplicates from video or storage-screen contents, continue to do very well.

The 4023 "refreshed" alphanumeric terminal (with a TV-like CRT) has been profitable—even though that field is overcrowded, with most of its leaders losing money. The 4023 has done what we intended: Provided a quality alpha terminal for users who aren't quite ready for graphics, so they'll think kindly of us when they are. □

LESS THAN one-sixth-inch square, a memory device containing 4000 transistors is placed (in its 16-pin package) in a Tektronix automated system for testing.

Tektronix vs. 1975

THE OUTLOOK, according to economists, is uncertain—and then they add, "Probably."

Maybe it's truth or maybe just wry wit to say the secret of forecasting well is to forecast often. But it does seem that, taken all together, economic forecasts (good times coming, bad times coming) tend to average out to something around zero.

The U.S. economy, and those of other nations, are the big question mark as Tektronix moves into another year.

The worst thing is inflation. At the very least, it warps the economic picture, causing distortions in both demand and supply: People buying today to beat tomorrow's higher price; others withholding goods from the market to *gain* that higher price. At worst, inflation saps the vitality of nations, their institutions and the people who make them all work.

(Electronics, it may be said with some pride, has contributed very little to inflation. The semiconductor industry, for example, is one of the few in which unit cost, even in the face of inflationary pressures, has gone *down*.

(A DC-to-20-MHz oscilloscope sold in 1950 for $1650. Now, even at today's greatly inflated prices, you can buy a 35-MHz Tek scope for about $1650 with three times the sensitivity, plus delaying sweep, big screen and numerous convenience features.)

The understandable desire for expansion and full employment makes inflation tolerable to many sectors. However, count the cost: From 1970 through 1973, U.S. GNP was up 32 per cent. But *half* that "increase" was inflation. If left to run wild, here and abroad, by political leaders too lacking in ability (or sternness) to take corrective steps, it can mean only grief.

For our part, we intend—as we hope other businesses do—to continue improving productivity, thus bucking rather than riding the inflationary tide.

A RELATED PROBLEM is money. It costs an awful lot; it's hard to come by; and, internationally, its values keep changing around. Floating currencies are a nuisance, making it hard to predict and plan, and generally fouling up the books.

The historically stable U.S. dollar has grown stronger during the year. That's good; we'd never felt proud making any profits because it was down. Yet we're cheering rather softly; for a stronger dollar creates, on the books, a decrease in our overseas assets.

Let's put it this way: It would be preferable if factors like this would stay out of the works, factors reflective neither of our technical nor operating skills. But they won't. And if we're cool toward the whole idea of "living with" inflation, we have become resigned to living with the fractious behavior of the world's money.

NOW FOR THE things we can do something about:

We continue to look for healthy business. Our five-year plan is optimistic, too.

Last year was a tough act to follow. But we have a lot going for us:

- *Versatility.* These are times of massive technical and scientific change. A technologically broad company like Tektronix benefits in two ways: First, as a supplier of needed products to these emerging technologies; second, as a user of those technologies. A narrower company would have far fewer such options. Versatility pays off in a broadened product range.
- *Broadened product range.* Wall-to-wall, this is our strongest product line ever. Most of them are in early growth stages, with peak sales years still ahead. And, newer, non-scope product sales are increasing fastest of all, often serving new markets.

• *Markets.* Electronics, worldwide, is growing 1½ times as fast as the economy; semiconductors, 1½ times as fast as electronics. Those rates can taper off a lot and still be going up. If color television is a maturing area, closed-circuit and cable-TV applications are still relative infants. Computer graphics is a fast-growing field. The markets for programmable calculators and non-scope test and measurement products are large, giving our recent product entries lots of room in which to grow.

The defense budget has stopped declining. Until the day trust replaces armed watchfulness, a key part of national security will be electronic systems.

Energy-related budgets are bound to increase. Like defense, the quest for energy won't—*can't*—be affected by economic ups and downs; either you have power or you're powerless.

New products on the way promise to capitalize further on the trends discussed in this report: Graphics, digital techniques, intelligence, systems, energy research, portability—and, certainly, combinations of these. To produce these products demands greater capacity.

• *Capacity.* New buildings and facilities will increase our efficiency and help us improve our delivery.

• *Delivery.* We no longer wish to risk having someone buy a product elsewhere that he didn't really want because the one he *did* would have taken us too long to provide. We've talked a lot this year about delays; unfortunately, when all was said and done, more was said than done. We still have a very large backlog.

• *Backlog.* Eighty million dollars (at June 30) is a reassuring order buffer, should the economy sour and we need time to readjust. (Of course, to wish for that would be like hoping the war will last until you get your furlough.) One reason unfilled demand keeps growing, we feel, is sales incentives.

• *Sales incentives.* Quota and commission programs were very successful last year for those sales people chosen to take part. We expect incentives will have the same sales-boosting effect next year on *all* of them.

Which brings us to our not-secret weapon, turned-on people.

• *People.* If you watch TV, or are otherwise alert, you'll soon be informed that any given railroad, airline, bank, etc. "*is* people." That may be the cliche of the year, yet it's true; there is no greater resource. It follows, then, that if you have the best people, you have an edge. We firmly believe we do.

WHY, WHEN HE was only 10, the windy speaker went on, he sold newspapers. At 8, he earned money by shining shoes; at 6, he ran errands for neighbors . . .

"What were you before that?" asked Groucho Marx. "A bum?"

That's the trouble with describing organizational improvements, of whatever magnitude; the reader may wonder what we were doing before.

The fact is, Tektronix has just plain outgrown many of its support systems. So we've invested substantially in refurbishing our general-ledger, order-processing and management-information systems, for better customer service, sharpened cost control and less paper work.

All are "on-line" systems—kept up-to-the-minute, they'll yield current information at a moment's notice.

YOUR COMPANY IS IN a period of transition—but then that's been true for 26 years. With three solid growth years behind us and another expected, we find our New Year's resolutions are about the same as those of 12 months ago:

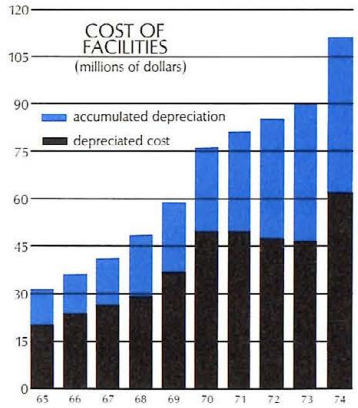
• To continue honing the cutting edge of technology—in all its exciting new directions—by providing the state-of-the-art tools the innovator must have;

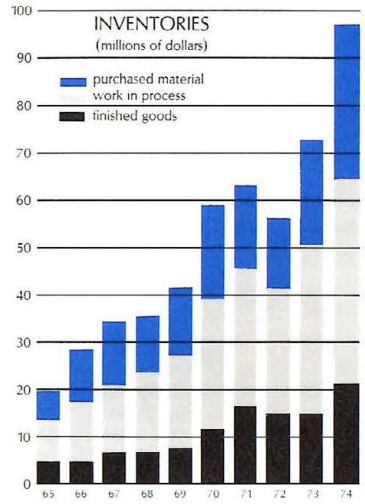
• At the same time, through simpler, easier-to-use, lower-cost products, to serve the broad and rapidly expanding array of less-far-out applications;

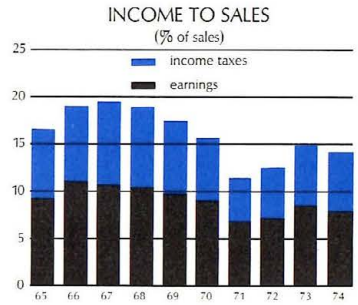
• And, internally, again to dedicate Tektronix' human resources—a truly incomparable group of men and women—to higher individual (and thus company) productivity.

The world is working smarter.

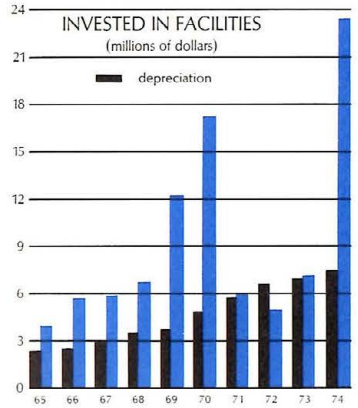
So must we. □

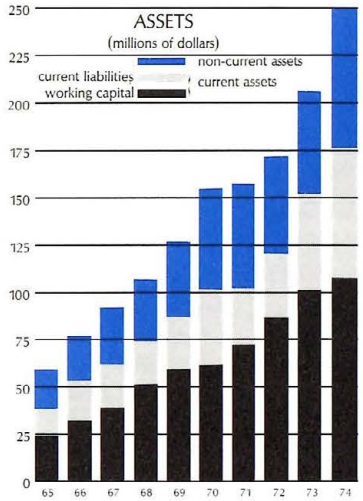

COST OF FACILITIES
(millions of dollars)
accumulated depreciation
depreciated cost
120
105
90
75
60
45
30
15
0
65 66 67 68 69 70 71 72 73 74

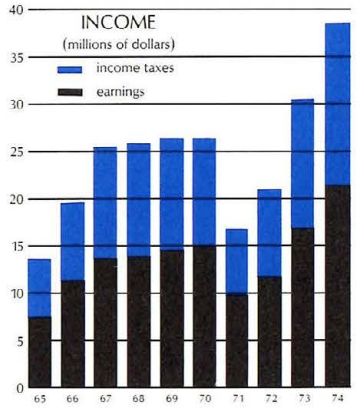

INVENTORIES
(millions of dollars)
purchased material
work in process
finished goods
100
90
80
70
60
50
40
30
20
10
0
65 66 67 68 69 70 71 72 73 74

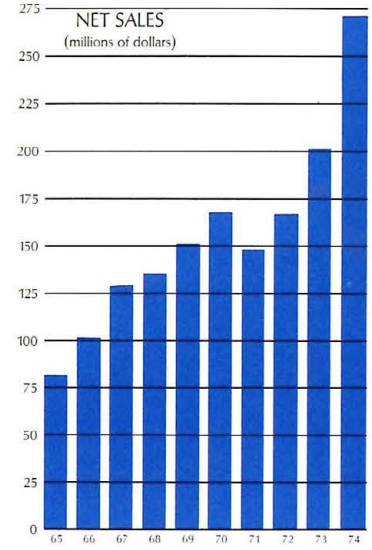

INCOME TO SALES
(% of sales)
income taxes
earnings
25
20
15
10
5
0
65 66 67 68 69 70 71 72 73 74


EARNINGS PER SHARE
$2.50
2.25
2.00
1.75
1.50
1.25
1.00
.75
.50
.25
65 66 67 68 69 70 71 72 73 74


INVESTED IN FACILITIES
(millions of dollars)
depreciation
24
21
18
15
12
9
6
3
0
65 66 67 68 69 70 71 72 73 74


ASSETS
(millions of dollars)
non-current assets
current assets
current liabilities
working capital
250
225
200
175
150
125
100
75
50
25
0
65 66 67 68 69 70 71 72 73 74


INCOME
(millions of dollars)
income taxes
earnings
40
35
30
25
20
15
10
5
0
65 66 67 68 69 70 71 72 73 74


NET SALES
(millions of dollars)
275
250
225
200
175
150
125
100
75
50
25
0
65 66 67 68 69 70 71 72 73 74

Tektronix Consolidated Income And Reinvested Earnings

Restated to include The Grass Valley Group, Inc.

The accounting year is the 52 or 53 weeks ending the last Saturday in May.

(THOUSANDS OF DOLLARS)

1970	1971	1972	1973	1974	
168,939	**149,442**	**167,482**	**202,855**	**271,428**	**NET SALES** Amounts receivable for products sold or rented. Tektronix sold directly to customers at retail in the U.S., and countries in which it has marketing subsidiaries, and to distributors (including 50% owned companies) at a discount, for resale in most of the rest of the world. From NET SALES are deducted
85,331	**81,791**	**86,552**	**100,335**	**133,062**	**MANUFACTURING COST OF SALES** The cost of materials used in the products sold. Also, the payroll costs of the employees who fabricated and assembled them, their supervisors, those who assisted them, those who devise improved manufacturing methods and those who design and make tools and equipment. Also, the expense of running the manufacturing operations, leaving
83,608	**67,651**	**80,930**	**102,520**	**138,366**	**GROSS PROFIT** From which must be deducted
56,477	**50,111**	**60,992**	**73,645**	**99,969**	**OPERATING EXPENSE AND PROFIT SHARING**
14,857	15,949	19,241	25,459	36,823	SELLING Comprising payroll of sales engineers and employees who assist them, commissions to some marketing representatives, advertising, travel, rent of offices, and the other expenses of marketing.
15,420	14,534	17,976	18,208	22,573	ENGINEERING Payroll of engineers, creators and those who help them design and develop new products and the components to be assembled into them; improve existing products; and assure that new product designs provide "buildability" by the improved methods. The expenditure includes cost of materials, supplies, space and related expense.
13,056	11,353	13,313	15,103	21,867	ADMINISTRATIVE Including payroll of executives and personnel working on accounting, employment, data processing, facilities and communications functions, and the many expenses related to them.
13,144	8,275	10,462	14,875	18,706	PROFIT SHARING (Note 5) Which acts as an incentive for employees' performance by rewarding them with 35% of the profits they are responsible for generating, leaving
27,131	**17,540**	**19,938**	**28,875**	**38,397**	**OPERATING INCOME** Which is (increased) or decreased by non-operating items.
733	**734**	**(1,070)**	**(1,604)**	**(100)**	**NON-OPERATING EXPENSE (INCOME)**
(478)	(420)	(597)	(1,286)	(1,664)	INTEREST INCOME Earnings of cash and investments earning interest.
(394)	(477)	(602)	(834)	(1,087)	EQUITY IN EARNINGS OF 50% OWNED COMPANIES.
(170)	(120)	(377)	(754)	(826)	GAIN ON DISPOSITION OF FACILITIES Net amount in excess of depreciated cost from sale or abandonment of facilities no longer needed.
309	(57)	(1,151)	(606)	1,016	CURRENCY FLUCTUATION Translation and exchange of foreign currencies.
688	1,160	697	669	1,222	INTEREST EXPENSE Cost of borrowed money.
475	496	673	644	584	AMORTIZATION OF INTANGIBLE ASSETS Amounts expensed representing write-off of cost of intangible assets.
303	152	287	563	655	OTHER Charitable contributions, net royalty income and uninsured losses.
26,398	**16,806**	**21,008**	**30,479**	**38,497**	**INCOME BEFORE INCOME TAXES** From which is deducted
11,393	**6,902**	**9,244**	**13,740**	**17,144**	**PROVISION FOR INCOME TAXES** (Note 4) Estimated income taxes to be paid to the United States and state and local governments, plus estimated income taxes to be paid other countries, related to the taxable income of foreign subsidiaries. The provision for U.S. income taxes covers any U.S. income taxes on dividends that may be repatriated from foreign subsidiaries and U.S. income taxes of the DISCs allowed to be deferred. Deductions of income taxes resulted in
8,294	4,237	6,419	9,845	11,600	U.S.
885	661	700	990	1,400	STATE
2,214	2,004	2,125	2,905	4,144	FOREIGN
15,005	**9,904**	**11,764**	**16,739**	**21,353**	**EARNINGS** The measure of company performance—the amount reinvested in expansion of business after payment of dividends. Add (deduct) the following items to obtain reinvested earnings at end of year.
92,546	107,532	117,467	129,186	144,140	REINVESTED EARNINGS AT BEGINNING OF YEAR (Note 2).
—	—	—	(1,785)	(1,781)	DIVIDENDS PAID (Note 10) includes the Grass Valley Group, Inc.
(19)	31	1	—	—	PROCEEDS FROM SALE OF TREASURY SHARES IN EXCESS OF (LESS THAN) COST
—	—	(46)	—	254	ADJUSTMENTS RELATED TO POOLED COMPANY (Note 2).
107,532	117,467	129,186	144,140	163,966	REINVESTED EARNINGS AT END OF YEAR
8,565	**8,572**	**8,590**	**8,632**	**8,646**	**WEIGHTED AVERAGE NUMBER COMMON SHARES OUTSTANDING DURING YEAR** (Thousands) (Note 2). Adjusted retroactively for shares issued to acquire The Grass Valley Group, Inc.
$1.75	**$1.16**	**$1.37**	**$1.94**	**$2.47**	**EARNINGS PER COMMON SHARE** Earnings for the year divided by the weighted average number of common shares outstanding during the year. Dilution if all outstanding share options were exercised would not have reduced primary earnings more than two cents.

The accompanying notes are an integral part of these financial statements.

Tektronix Consolidated Financial Position

(THOUSANDS OF DOLLARS)

Restated to include The Grass Valley Group, Inc.

May 27, 1972	May 26, 1973	May 25, 1974	
120,539	**151,033**	**176,405**	**CURRENT ASSETS** Those assets likely to be converted to cash or used in the ordinary operation of the business, made up of:
2,053	2,620	3,018	CASH Mostly in checking accounts or deposits in transit.
26,798	27,871	15,655	CASH EARNING INTEREST Invested in savings accounts, certificates of deposit, U. S. treasury bills, prime commercial paper, or short-term tax-exempt securities.
33,134	44,757	55,683	ACCOUNTS RECEIVABLE Amounts due from customers for sales on credit.
(301)	(340)	(453)	ALLOWANCE FOR DOUBTFUL ACCOUNTS Estimate of erosion in value of accounts receivable because a few customers may not pay us.
2,789	3,221	5,272	PREPAID EXPENSES AND DEPOSITS Amounts paid for things that will not be used and deducted until the following year, and deposits that will be refunded.
1,148	1,475	1,981	SUPPLIES Items that will be consumed in operating offices, maintaining facilities, and running manufacturing plants.
54,918	71,429	95,249	INVENTORIES, AT LOWER OF COST (FIRST-IN, FIRST-OUT) OR MARKET The cost of products finished but not yet sold; purchased materials and parts to be fabricated and assembled into products; and the materials, payroll costs and other costs accumulated in the process of manufacturing products not yet completed.
14,622	14,663	21,147	Consisting of: Finished goods
26,837	36,277	43,657	Work in process
13,459	20,489	30,445	Purchased materials
31,802	**46,644**	**68,484**	**CURRENT LIABILITIES** Obligations due to be paid within one year, including:
8,600	10,600	23,000	NOTES PAYABLE (Note 8) Amounts borrowed for less than one year.
168	141	336	CURRENT PORTION OF LONG-TERM INDEBTEDNESS (Note 3) Installment payments due within one year.
6,323	11,867	16,706	ACCOUNTS PAYABLE Amounts due suppliers for materials and services bought on credit.
4,474	8,153	8,246	U.S., STATE AND FOREIGN INCOME TAXES (Note 4) Taxes not yet paid.
6,099	7,499	8,429	EMPLOYEE PROFIT SHARING (Note 5) Due employees and their retirement funds.
3,100	5,156	6,698	PAYROLL AND PAYROLL TAXES Amounts due employees next payday, and taxes due on or withheld from pay.
1,929	2,422	3,612	VACATIONS Amounts earned by employees for their vacations, but not yet used or paid.
1,109	806	1,457	INTEREST AND MISCELLANEOUS TAXES Interest, property tax, and sales taxes collected, not yet paid.
88,737	**104,389**	**107,921**	**WORKING CAPITAL** Current Assets minus Current Liabilities.
47,221	**46,167**	**61,355**	**FACILITIES AT DEPRECIATED COST** (Note 3) The cost of buildings and equipment used in the business, reduced by depreciation.
45,998	45,883	46,769	BUILDINGS AND GROUNDS Cost of buildings, including parking lots and landscaping.
35,942	39,666	48,230	MACHINERY AND FURNITURE Cost of furnishings.
261	286	586	LEASEHOLD IMPROVEMENTS Cost of remodeling rented space.
(37,726)	(43,514)	(49,947)	ACCUMULATED DEPRECIATION Reduction of value for use, wear and age which has been claimed as an expense of doing business, mostly computed by accelerated depreciation methods.
2,146	1,942	2,996	LAND Cost of land used in business.
600	1,904	12,721	CONSTRUCTION IN PROGRESS Costs accrued on equipment and buildings not yet put into operation.
2,961	**2,243**	**1,685**	**INTANGIBLE ASSETS** Amounts not yet deducted (amortized) as a cost of doing business for patents, trademarks and the excess paid over the values ascribed to the net tangible assets of the companies acquired. This excess is frequently called goodwill.
3,022	**7,156**	**11,616**	**INVESTMENTS AND LONG-TERM RECEIVABLES** (Note 2) The investment in and advances to 50% owned companies and one half their reinvested earnings. Also included are installments of sale and lease contracts receivable due after one year and securities not expected to be liquidated within a year.
(1,120)	**(959)**	**(637)**	**LONG-TERM INDEBTEDNESS LESS CURRENT PORTION** (Note 3) The unpaid portion minus payments due within one year of amounts borrowed for more than one year.
(1,818)	**(3,366)**	**(6,452)**	**DEFERRED INCOME TAXES** (Note 4) For DISCs and future dividends from foreign subsidiaries.
(515)	**—**	**—**	**RESERVE FOR CURRENCY FLUCTUATION** Amount reserved to offset losses on translation of foreign currencies.
138,488	**155,630**	**175,488**	**SHAREOWNERS' EQUITY** (Notes 6 and 7) The net assets or book value owned by shareowners. This is equal to the assets minus liabilities. Shareowners' equity is made up of:
9,357	12,158	12,213	COMMON SHARES The amount the company received for issuance of common shares.
(55)	(668)	(691)	TREASURY SHARES The cost of Textronix, Inc. common shares repurchased and held by the company.
129,186	144,140	163,966	REINVESTED EARNINGS The accumulation of earnings that has been reinvested in the business.

The accompanying notes are an integral part of these financial statements.

Tektronix Consolidated Changes In Financial Position

(THOUSANDS OF DOLLARS)

Restated to include The Grass Valley Group, Inc.

The accounting year is the 52 or 53 weeks ending the last Saturday in May.

1970	1971	1972	1973	1974	
					This statement summarizes how working capital was provided and used.
20,690	**15,821**	**19,862**	**24,416**	**31,497**	**WORKING CAPITAL PROVIDED FROM OPERATIONS:**
15,005	9,904	11,764	16,739	21,353	EARNINGS Net income after income taxes as shown on EARNINGS STATEMENT.
4,904	5,898	6,394	6,834	7,525	DEPRECIATION OF FACILITIES The amounts deducted from net sales representing the decrease in value of buildings, machinery and furniture resulting from use, wear and age. These did not involve outlays of working capital, and most were computed by the sum-of-years-digits method.
475	496	673	644	584	AMORTIZATION OF INTANGIBLE ASSETS The amounts deducted from net sales representing the write-off of costs of intangible assets, which also did not involve outlays of working capital.
(394)	(477)	(602)	(834)	(1,051)	EQUITY IN EARNINGS OF 50% OWNED COMPANIES less cash dividends received including equity in net gain on translation of their monetary items. These amounts added to investment.
—	—	515	(515)	—	RESERVE FOR CURRENCY VALUATION Amount reserved to offset anticipated losses in translation of foreign currencies, which did not require (provide) working capital.
700	—	1,118	1,548	3,086	DEFERRED INCOME TAXES Amounts deducted from net sales not required to be paid currently.
1,020	**2,827**	**1,978**	**4,459**	**1,576**	**WORKING CAPITAL PROVIDED FROM:**
187	277	161	143	341	DISPOSITION OF TREASURY SHARES Net proceeds from sale of Tektronix, Inc. treasury shares to employees as part of our employee share purchase plan and stock option plans.
552	579	467	2,802	55	ISSUANCE OF COMMON SHARES Net proceeds from sales of Tektronix, Inc. unissued shares to employees exercising stock options.
206	330	549	1,295	774	RECOVERY OF COST ON SALES OF FACILITIES That part of the proceeds from sales of facilities no longer needed by the company, equivalent to the depreciated cost.
—	1,452	—	—	—	LONG-TERM INDEBTEDNESS INCURRED The portion of the estimated purchase price of the business acquired to be paid in instalments as earned.
75	189	205	107	109	REDUCTION OF LONG-TERM ADVANCES Amounts becoming current assets due within one year.
—	—	596	112	—	REDUCTION OF INTANGIBLE ASSETS Reduction in estimate of purchase price of business acquired.
—	—	—	—	297	ADJUSTMENTS RELATED TO POOLED COMPANY
18,564	**8,452**	**6,131**	**13,223**	**29,541**	**WORKING CAPITAL USED FOR:**
17,289	6,047	4,915	7,075	23,530	ADDITIONS TO FACILITIES Cost of land, buildings, machinery and furniture purchased or constructed.
72	51	685	160	323	REDUCTION OF LONG-TERM INDEBTEDNESS Amounts becoming current liabilities due within one year, and reduction in estimate of purchase price of business acquired.
89	1,992	244	45	27	INTANGIBLE ASSETS Amounts paid for patents and trademarks and accrued in excess of values ascribed to the net tangible assets of the businesses acquired (goodwill).
915	115	44	3,402	3,516	INVESTMENTS Long-term securities, receivables and advances to 50% owned companies.
199	247	243	756	364	PURCHASE OF TREASURY SHARES Cost of Tektronix, Inc. common shares acquired by company.
—	—	—	1,785	1,781	PAYMENT OF DIVIDEND (Note 10) Includes The Grass Valley Group, Inc.
3,146	**10,196**	**15,709**	**15,652**	**3,532**	**RESULTING INCREASE IN WORKING CAPITAL** Made up of
14,779	**486**	**18,547**	**30,494**	**25,371**	**INCREASE (DECREASE) IN CURRENT ASSETS** Minus
(4,319)	(338)	19,847	1,640	(11,819)	CASH AND CASH EARNING INTEREST
1,738	(2,052)	5,720	11,583	10,814	ACCOUNTS RECEIVABLE—NET
17,489	3,851	(7,016)	16,511	23,820	INVENTORIES
(129)	(975)	(4)	760	2,556	SUPPLIES, PREPAID EXPENSES AND DEPOSITS
11,633	**(9,710)**	**2,838**	**14,842**	**21,839**	**INCREASE (DECREASE) IN CURRENT LIABILITIES**
10,573	(3,601)	(1,181)	1,972	12,596	NOTES PAYABLE AND CURRENT PORTION OF LONG-TERM DEBT
1,008	(1,250)	1,016	7,791	8,220	ACCOUNTS PAYABLE AND OTHER CURRENT LIABILITIES
37	(2,662)	2,346	1,400	930	EMPLOYEE PROFIT SHARING
15	(2,197)	657	3,679	93	U.S., STATE AND FOREIGN INCOME TAXES
59,686	**62,832**	**73,028**	**88,737**	**104,389**	**WORKING CAPITAL AT BEGINNING OF PERIOD** Plus increase in working capital equals
62,832	**73,028**	**88,737**	**104,389**	**107,921**	**WORKING CAPITAL AT END OF PERIOD** As shown on FINANCIAL POSITION STATEMENT.

The accompanying notes are an integral part of these financial statements.

Notes To Financial Statements: Tektronix, Inc. And Subsidiaries

1. SIGNIFICANT ACCOUNTING POLICIES:

Principles of Consolidation

The consolidated financial statements include the accounts of Tektronix, Inc. and its subsidiaries (all wholly-owned) since dates of organization or acquisition, and retroactively to all periods for The Grass Valley Group, Inc., acquired in a pooling of interests on February 21, 1974 (see Note 2). All material intercompany accounts, transactions and profits have been eliminated in the consolidated financial statements.

Foreign Currency Translation

Facilities and related depreciation, inventories, and other non-monetary assets of foreign subsidiaries are translated into U.S. dollars at historical rates of exchange. Monetary assets and liabilities are translated at year-end rates of exchange. Income and expenses, other than depreciation expense, are translated at the rates prevailing at the end of each four-week accounting period. Translation and exchange gains and losses are included in non-operating income.

Inventories

Inventories are valued at the lower of cost, principally on a first in-first out basis, or market.

Facilities and Depreciation

Facilities are carried at cost. Expenditures for maintenance, repairs, and betterments which do not add to the original value of the related assets or materially extend their original lives are expensed as they are incurred. Accelerated methods of depreciation are generally used both for financial accounting and tax purposes based on estimated useful lives of the properties. Leasehold improvements are amortized on the straight-line basis over the periods of the leases.

Intangible Assets

Intangibles consist primarily of the excess of the purchase price over the value ascribed to the net tangible assets of businesses acquired. These amounts are being amortized on the straight-line method over periods not exceeding 15 years.

Investments in Joint Venture Companies

Investments in 50%-owned joint venture companies are stated at cost plus the Company's equity in undistributed earnings since dates of organization.

Income Taxes

In addition to provisions for applicable income taxes in each country and state, provisions are made for additional United States income tax on undistributed foreign subsidiary earnings which may not be indefinitely employed in the subsidiaries' operations (see Note 4).

In 1974, provision was made for accumulated amounts of income taxes allowed to be deferred by operation of the Company's Domestic International Sales Corporations (see Note 4).

Investment tax credits are accounted for on the "flow-through" method, which recognizes the reduction in tax in the year in which assets giving rise to the credit are placed in service.

Engineering and Development

Expenditures for plant start-up, engineering, and research and development are expensed as they are incurred.

2. SUBSIDIARIES AND 50%-OWNED COMPANIES:

On February 21, 1974, the Company issued 465,637 of its previously unissued common shares in exchange for all the outstanding common stock of The Grass Valley Group, Inc. The transaction was treated for accounting purposes as a pooling of interests and, accordingly, the accompanying consolidated financial statements are presented as though the companies had been combined throughout each period. Sales and earnings of Grass Valley included in the consolidated financial statements are as follows:

	Year Ended				
May 30, 1970	May 29, 1971	May 27, 1972	May 26, 1973	May 25, 1974	
$3,734,098	$3,443,393	$3,214,907	$4,657,960	$6,088,174	Sales
750,917	574,740	546,627	1,065,727	1,470,212	Earnings

The inclusion of Grass Valley did not change earnings per share previously reported for the years 1970 through 1973 by more than 2¢.

The accounts and transactions of Grass Valley included in the consolidated financial statements for years prior to 1974 are on the basis of Grass Valley's former fiscal year which ended on the preceding December 31.

In 1974, the fiscal year was changed to conform to that of Tektronix, Inc. and the net results of Grass Valley's operations for the period January 1, 1973 to May 26, 1973 ($461,529) less dividends and other capital transactions during the same period ($207,993) have been included as a $253,536 adjustment of consolidated reinvested earnings.

The $1,200,773 reinvested earnings of Grass Valley at December 31, 1968 have been included in the consolidated reinvested earnings at the beginning of 1970.

Assets, liabilities and equity in earnings of foreign subsidiaries in the following amounts (translated at appropriate rates of exchange) are included in the consolidated financial statements:

May 27, 1972	May 26, 1973	May 25, 1974	
$38,768,431	$44,073,016	$58,817,780	Current assets
8,670,581	7,881,677	8,870,345	Property—net
1,531,155	1,125,785	966,797	Intangible assets and investments
5,601,833	6,738,803	11,128,112	Current liabilities
250,409	226,810	200,400	Long-term indebtedness
5,589,782	5,471,825	8,994,473	Equity in current year's earnings

The Company's share of the net assets of 50%-owned companies, included in investments, consists of the following:

May 27, 1972	May 26, 1973	May 25, 1974	
$ 602,351	$ 834,182	$ 1,087,294	Current year's earnings
		(35,973)	Less dividends
1,181,748	1,784,099	2,618,281	Beginning re-invested earnings
1,784,099	2,618,281	3,669,602	Ending re-invested earnings
139,334	262,618	280,334	Capital
$ 1,923,433	$ 2,880,899	$ 3,949,936	TOTAL

3. LONG-TERM INDEBTEDNESS:

Long-term indebtedness consists of the following:

May 27, 1972	May 26, 1973	May 25, 1974	
$ 250,409	$ 226,810	$ 200,400	Long-term note
821,128	708,628	408,628	Contract payable
48,691	24,346	27,763	Other
$ 1,120,228	$ 959,784	$ 636,791	TOTAL

The long-term note is payable to the City of Heerenveen, the Netherlands, in annual installments of $36,337, plus interest at 4½%. Facilities which cost $1,300,000 are pledged as collateral. The debt was incurred in 1961 in the original amount of $528,200.

The contract payable represents the discounted estimated contingent portion (which estimate was revised downward during the years ended May 26, 1973 and May 27, 1972) of the purchase price of the assets of an electronic calculator business acquired in May, 1971. Contingent payments are based on sales of calculator products to May, 1976. The Company is amortizing the contingent portion of the purchase price as the payments accrue.

4. INCOME TAXES:

In the year ended May 25, 1974, the Company restored to income $1,717,064 of prior provisions for United States income taxes on undistributed earnings of foreign subsidiaries, due primarily to the removal of dividend repatriation requirements which existed under previous regulations of the Office of Foreign Direct Investments. Such prior provisions charged to income were approximately $1,500,000 in 1973, $1,300,000 in 1972, and $700,000 in prior years. The remaining balance of approximately $1,650,000 relating to such taxes has been included in deferred income taxes at May 25, 1974 and cumulative provisions of prior periods previously accrued as current income taxes payable have been reclassified in the consolidated financial statements for prior periods as deferred income taxes. The reclassification had no effect on earnings. Undistributed reinvested earnings of foreign subsidiaries amounted to approximately $47,000,000 at May 25, 1974. Except for the amounts mentioned above and income tax provisions relating to approximately $3,800,000 of dividend distributions to be made within the next year, no provision has been made for additional United States income taxes which could result from the transfer of such reinvested earnings to Tektronix, Inc. because it is anticipated that they will continue to be employed indefinitely in the subsidiaries' operations. If such reinvested earnings were to be transferred to Tektronix, Inc., foreign tax credits would be available to partially offset

the amount of United States income taxes otherwise payable.

Because of uncertainty of the future of legislation allowing indefinite deferral of taxation of the undistributed earnings of its Domestic International Sales Corporations (DISCs), the Company made provision for $4,802,902 of deferred income taxes in the year ended May 25, 1974. The provision represents the tax effect of the accumulated undistributed earnings of the DISCs, including transfers to one DISC from the Company's Export Trade Corporation subsidiary. Income tax expense had been reduced by approximately $1,300,000 in 1973 and $350,000 in 1972 for tax deferrals relating to the DISC operations.

The total provision for income taxes for the year ended May 25, 1974 resulted in an overall effective income tax rate of 44.5%, and is $1,334,848 less than the amount which would result by applying the United States statutory rate of 48% to income before income taxes. A reconciliation of the difference is as follows:

Computed income taxes based on United States statutory rate of 48%	$18,478,456
Effect of certain foreign subsidiary earnings taxed at rates lower than the United States statutory rate	(2,257,404)
Provision for deferred income taxes of DISCs in excess of amount relating to 1974 DISC operations	2,813,710
Prior provisions for tax on undistributed earnings of foreign subsidiaries restored to income	(1,717,064)
State income taxes, net of Federal income tax benefit	721,401
Investment tax credit	(564,482)
Other—net	(331,009)
Provision for income taxes	$17,143,608

The overall effective income tax rates for the four years ended May 26, 1973 ranged from 41.1% to 45.1%. The variances from the United States statutory income tax rate resulted primarily from the effect of certain foreign subsidiary earnings taxed at rates lower than the United States statutory rate.

5. EMPLOYEE PROFIT-SHARING:

Under the terms of the Company's profit-sharing plan, which covers most of the subsidiary companies, approximately 35% of income before income taxes, profit-sharing, and charitable contributions of the participating companies is provided for current and retirement profit-sharing for employees.

6. SHAREOWNERS' EQUITY:

Authorized capital consists of 20,000,000 shares without par value. Issued and outstanding shares (adjusted retroactively for the pooling of interests described in Note 2) are as follows:

May 27, 1972	May 26, 1973	May 25, 1974	
8,603,009	8,668,732	8,670,507	Issued
1,445	18,127	19,463	Held in treasury
8,601,564	8,650,605	8,651,044	Outstanding

7. EMPLOYEE STOCK OPTION AND SHARE PURCHASE PLANS:

Under qualified stock option plans for employees, 378,221 common shares of the Company were reserved at May 25, 1974. The plans provide that the option price shall not be less than 100% of the fair market value of the shares on the date of grant and that the options are exercisable in four (or fewer, where the option period is less than five years) cumulative annual installments beginning one year after the date of grant.

At May 25, 1974, options to purchase 336,269 shares were outstanding for which the option price, ranging from $19.64 to $60.10 per share, amounted to $13,269,173 and options to purchase 135,635 shares were exercisable, for which the option price amounted to $6,066,570. During the year then ended, including options which became exercisable in Tektronix, Inc. shares by optionees of The Grass Valley Group, Inc., options became exercisable for 72,239 shares at option prices per share ranging from $19.64 to $60.10 with market prices per share at date exercisable ranging from $31.10 to $52.35. Options were exercised for 7,432 shares at option prices per share ranging from $24.45 to $55.65 and market prices per share at date of exercise ranging from $36.00 to $55.70.

Option and market prices for options which became exercisable and for options which were exercised in the five years ended May 25, 1974 were as follows:

	Options Which Became Exercisable		Options Exercised	
Year	Option Price	Market Price	Option Price	Market Price
1974	$3,028,478	$2,984,354	$ 231,072	$ 342,324
1973	1,674,898	1,853,539	2,695,908	3,402,591
1972	2,388,433	2,025,083	465,520	577,024
1971	2,702,120	2,007,047	579,102	673,254
1970	1,870,796	2,561,238	514,847	870,382

The Company adopted a nonqualified stock option plan in September 1973, under which 100,000 common shares are reserved. The plan provides that the option price must be at least 85% of the fair market value of the shares on the date of grant. At May 25, 1974, no options had been granted under the plan.

Under an "Employee Share Purchase Plan", 164,304 common shares of the Company are reserved. The share purchase discount provided in the plan (which may not exceed 15% of market value on the date of purchase), has been charged to income as follows: $7,244 in 1974, $3,431 in 1973, $9,219 in 1972, $17,674 in 1971, and $6,261 in 1970.

8. SHORT-TERM NOTES PAYABLE:

The Company has line of credit agreements and borrowing arrangements covering domestic and foreign short-term notes payable to banks. At May 25, 1974, such lines and arrangements aggregated $26,000,000 of which $23,000,000 was outstanding under current borrowings. Compensating balances included in cash and required for $10,000,000 of such credit lines are not significant.

The May 25, 1974 balance of notes payable, representing maximum outstanding borrowings during the year, bears interest at an average rate of 11.7%. Average borrowings during the year, based on period-end balances, were $11,843,000 at an approximate weighted average interest rate of 9.5%.

9. COMMITMENTS:

The companies are committed under long-term building and equipment leases in the aggregate amount of $9,033,000 payable $2,228,000 in 1975, $2,023,000 in 1976, $1,469,000 in 1977, $1,279,000 in 1978, $546,000 in 1979, and $1,488,000 in 1980 and beyond.

Rental expense charged to income, including payments under short term leases, was $2,719,000 in 1974, $1,705,000 in 1973, $1,399,000 in 1972, $1,630,000 in 1971, and $1,472,000 in 1970.

At May 25, 1974, contractual commitments under construction programs for additional plant facilities approximated $4,220,000.

10. DIVIDENDS:

Tektronix, Inc. has paid dividends on its common shares at an annual rate of 20¢ per share since instituted in October, 1972. The amounts shown as dividends paid include $148,000 paid by Grass Valley in 1973 and $99,000 paid in 1974 prior to the acquisition.

ACCOUNTANTS' OPINION

TEKTRONIX, INC.:

We have examined the statements of consolidated financial position of Tektronix, Inc. and subsidiaries as of May 25, 1974, May 26, 1973, and May 27, 1972 and the related statements of consolidated income and reinvested earnings and of consolidated changes in financial position for the years then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances. The aforementioned consolidated financial statements as of May 26, 1973 and May 27, 1972 and for the years then ended have been restated to include the accounts of The Grass Valley Group, Inc. (see Note 2). We have not examined the financial statements of The Grass Valley Group, Inc. as of December 31, 1972 and 1971 and for the years then ended; these financial statements have been examined by other accountants, whose reports have been furnished to us.

In our opinion, based on our examination and the reports of other accountants referred to above, the accompanying statements present fairly the financial position of the companies as of May 25, 1974, May 26, 1973 and May 27, 1972 and the results of their operations and the changes in their financial position for the years then ended, in conformity with generally accepted accounting principles applied on a consistent basis.

Haskins & Sells

Portland, Oregon
July 11, 1974

Supplemental Financial Information

On February 21, 1974, The Grass Valley Group, Inc. was acquired. The acquisition is being treated as a pooling of interests and all financial information presented in previous annual reports has been restated as though Grass Valley had always been a part of Tektronix. Restated figures for each quarter of the past year are also presented.

1973-1974 INCOME STATEMENT

(Thousands of Dollars)

12 Weeks Ended Aug. 18 1973	12 Weeks Ended Nov. 10 1973	16 Weeks Ended Mar. 2 1974	12 Weeks Ended May 25 1974	52 Weeks Ended May 25 1974	
55,849	62,969	80,435	72,175	271,428	Net Sales
27,343	30,263	39,381	36,075	133,062	Cost of Sales
19,655	23,050	29,592	27,672	99,969	Expenses
(534)	(107)	1,086	(545)	(100)	Non-operating (Income) Expense
9,385	9,763	10,376	8,973	38,497	Income before Income Taxes
4,229	4,447	4,660	3,808	17,144	Provision for Income Taxes
5,156	5,316	5,716	5,165	21,353	Earnings
60¢	61¢	66¢	60¢	$2.47	Earnings per Share

SUPPLEMENTAL INFORMATION

(Thousands of Dollars)

1973	1974	
5066	7677	Maintenance and repairs
		Taxes, other than income taxes:
5488	7683	Payroll
2803	2602	Real and personal property
185	225	Business licenses and other
2355	3268	Advertising costs
18208	22573	Engineering (includes research and development costs)

COST OF FACILITIES

(Thousands of Dollars)

May 27, 1972	1973 Additions	1973 Retirements	May 26, 1973	1974 Additions	1974 Retirements	Reclassifications	May 25, 1974	
84,947	7,075	2,341	89,681	23,530	1,909	—	111,302	Total
2,146	1	205	1,942	1,105	51	—	2,996	Land
45,998	202	317	45,883	1,126	64	(176)	46,769	Buildings and Grounds
35,942	5,525	1,801	39,666	10,340	1,776	—	48,230	Machinery and Furniture
261	43	18	286	142	18	176	586	Leasehold Improvements
600	1,304	—	1,904	10,817	—	—	12,721	Construction in Progress

DEPRECIATION OF FACILITIES

(Thousands of Dollars)

Accumulated May 27, 1972	1973 Expense	1973 Retirements	Accumulated May 26, 1973	1974 Expense	1974 Retirements	Reclassifications	Accumulated May 25, 1974	
37,726	6,834	1,046	43,514	7,525	1,137	45	49,947	Total
17,488	1,870	122	19,236	1,742	42	(49)	20,887	Buildings and Grounds
20,148	4,927	915	24,160	5,722	1,084	35	28,833	Machinery and Furniture
90	37	9	118	61	11	59	227	Leasehold Improvements

ALLOWANCE FOR DOUBTFUL ACCOUNTS

(Thousands of Dollars)

May 27, 1972	1973 Expense	1973 Write-offs, Net of Recoveries	May 26, 1973	1974 Expense	1974 Write-offs, Net of Recoveries	May 25, 1974
301	139	(100)	340	248	(135)	453

Tektronix Consolidated Financial Statistics

(**DOLLARS**, SHARES AND SQUARE FEET IN THOUSANDS)

1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	Fiscal year ending in May
81,364	**102,162**	**129,961**	**135,021**	**151,011**	**168,939**	**149,442**	**167,482**	**202,855**	**271,428**	**NET SALES**
7,347	**11,111**	**13,620**	**13,810**	**14,572**	**15,005**	**9,904**	**11,764**	**16,739**	**21,353**	**EARNINGS**
87¢	$1.33	$1.64	$1.64	$1.72	$1.75	$1.16	$1.37	$1.94	$2.47	Per Share
9.0%	10.9%	10.5%	10.2%	9.7%	8.9%	6.6%	7.0%	8.3%	7.9%	% of Sales
19.1%	25.1%	24.8%	20.3%	17.4%	15.0%	8.6%	9.3%	12.1%	13.7%	% of Beginning-of-Year Shareowners' Equity
13,608	**19,703**	**25,611**	**25,825**	**26,379**	**26,398**	**16,806**	**21,008**	**30,479**	**38,497**	**INCOME BEFORE INCOME TAXES**
16.7%	19.3%	19.7%	19.1%	17.5%	15.6%	11.2%	12.5%	15.0%	14.2%	% of Sales
46.0%	43.6%	46.6%	46.0%	44.6%	43.2%	41.1%	44.0%	45.1%	44.5%	Income Tax Rate
26,111	**32,605**	**38,413**	**41,625**	**49,214**	**60,281**	**56,338**	**58,609**	**70,949**	**94,258**	**PAYROLL BEFORE PROFIT SHARE**
7,553	**10,810**	**13,744**	**13,542**	**13,360**	**13,144**	**8,275**	**10,462**	**14,875**	**18,706**	**EMPLOYEE PROFIT SHARE**
1,203	1,441	1,596	1,711	1,813	2,111	2,329	2,429	2,612	2,940	Facilities in Use at Year End (in Square Feet)
30,893	**35,986**	**41,447**	**47,638**	**59,256**	**76,146**	**81,381**	**84,947**	**89,681**	**111,302**	**COST OF FACILITIES**
3,915	**5,728**	**5,889**	**6,644**	**12,269**	**17,289**	**6,047**	**4,915**	**7,075**	**23,530**	**INVESTED IN FACILITIES** (during year)
2,353	**2,470**	**3,008**	**3,470**	**3,870**	**4,904**	**5,898**	**6,394**	**6,834**	**7,525**	**FACILITIES DEPRECIATION** (mostly accelerated)
11,323	**13,197**	**15,929**	**18,955**	**22,348**	**26,789**	**32,140**	**37,726**	**43,514**	**49,947**	**ACCUMULATED DEPRECIATION**
59,402	**76,459**	**93,348**	**107,552**	**127,813**	**155,619**	**157,808**	**173,743**	**206,599**	**251,061**	**TOTAL ASSETS**
12,701	**17,111**	**21,675**	**22,873**	**27,428**	**29,165**	**27,113**	**32,833**	**44,417**	**55,230**	**ACCOUNTS RECEIVABLE NET**
19,727	**28,537**	**34,305**	**35,289**	**41,599**	**59,252**	**63,085**	**56,066**	**72,904**	**97,230**	**INVENTORY** (including supplies)
39,180	**52,975**	**63,375**	**74,840**	**86,728**	**101,506**	**101,991**	**120,539**	**151,033**	**176,405**	**CURRENT ASSETS**
14,513	**20,935**	**23,480**	**22,183**	**27,042**	**38,674**	**28,963**	**31,802**	**46,644**	**68,484**	**CURRENT LIABILITIES**
24,667	**32,040**	**39,895**	**52,657**	**54,686**	**62,832**	**73,028**	**88,737**	**104,389**	**107,921**	**WORKING CAPITAL**
583	**610**	**2,134**	**988**	**501**	**429**	**1,930**	**1,288**	**1,100**	**973**	**LONG-TERM INDEBTEDNESS** (including current portion)
8,360	8,336	8,323	8,456	8,555	8,572	8,588	8,602	8,651	8,651	Common Shares Outstanding at Year End
44,335	**54,938**	**67,897**	**83,824**	**100,297**	**115,841**	**126,338**	**138,488**	**155,630**	**175,488**	**SHAREOWNERS' EQUITY**
6,009	**6,009**	**6,009**	**7,507**	**7,774**	**8,325**	**8,889**	**9,357**	**12,158**	**12,213**	**COMMON-SHARE CAPITAL**
39,781	**50,892**	**64,511**	**78,320**	**92,546**	**107,532**	**117,467**	**129,186**	**144,140**	**163,966**	**REINVESTED EARNINGS**
4,992	6,500	7,302	7,892	8,813	9,957	9,091	8,334	10,580	12,693	Number of Employees at Year End

Tektronix International Facilities

Tektronix Export Corporation, Beaverton, Oregon—A domestic International Sales Corporation

MANUFACTURING SUBSIDIARIES

Tektronix Guernsey Limited, Guernsey—Principally serving European Free Trade Association;
Tektronix Holland N.V., Heerenveen, The Netherlands—Principally serving European Common Market;
Tektronix U.K. Ltd., London—Telequipment instruments;
SONY/Tektronix Corporation, Tokyo, Japan—Serving Japan.

MARKETING SUBSIDIARIES

Australia—Tektronix Australia Pty. Limited, Sydney, Melbourne and Adelaide;
Austria, Rohde & Schwarz-Tektronix GmbH & Co. K.G., Vienna;
Belgium—Tektronix S.A., Brussels;
Canada—Tektronix Canada Ltd., Montreal, Toronto, Ottawa, Calgary, Vancouver and Dartmouth;
Denmark—Tektronix A/S, Copenhagen;
France—Tektronix, Paris, Tolouse, Nice, Lyons, Rennes and Nancy;
Japan—SONY/Tektronix Corporation, Tokyo, Osaka and Nagoya;
Sweden—Tektronix AB., Bromma and Gothenburg;
Switzerland—Tektronix International A.G., Zug and Geneva;
The Netherlands—Tektronix Datatek N.V., Schiphol;
United Kingdom—Tektronix U.K. Ltd., Harpenden, London, Manchester and Scotland.

MARKETING REPRESENTATIVES

Serviced by Tektronix, Inc., Beaverton

Argentina, Coasin S.A., Buenos Aires, Cordoba, Rosario;
Brazil, Importacao Industria e Comercio Ambriex, S.A., Rio de Janeiro, Sao Paulo, Porto Alegre, Belo Horizonte;
Chile, Equipos Industriales, S.A.C.I., Santiago;
Colombia, HTR Ingenieros, Ltda., Bogota;
Ecuador, Proteco Coasin Cia. Ltda., Quito;
Hong Kong, Gilman & Co., Ltd.;
India, Hinditron Services Private Limited, Bombay;
Indonesia, P.T. United Dico Citas Co. Ltd., Jakarta;
Korea, M-C International, Seoul;
Malaysia, Mecomb Malaysia Sdn. Bhd., Selangor;
Mexico, Tecnicos Argostal S.A., Mexico D.F., Monterrey, Guadalajara;
New Zealand, W & K McLean, Ltd., Auckland, Wellington;
Pakistan, Pak-Land Corporation, Karachi;
Peru, IRE Ingenieros, Lima;
Philippines, Philippine Electronics Industries, Rizal;
Singapore, Mechanical & Combustion Engineering Co., Ltd., Singapore;
Sri Lanka, Maurice Roche Limited, Colombo;
Taiwan, Heighten Trading Co., Ltd., Taipei;
Thailand, G. Simon Radio Company Ltd., Bangkok;
Uruguay, Coasin Uruguaya S.A., Montevideo;
Venezuela, Coasin C.A., Caracas.

MARKETING REPRESENTATIVES

Serviced by Tektronix Limited, Guernsey, Channel Islands

Angola, Equipamentos Tecnicos, Lda., Luanda;
Finland, Into O/Y, Helsinki;
Federal Republic of Germany, Rohde & Schwarz Vertriebs-GmbH, Cologne, Hamburg, Munich, Karlsruhe;
West Berlin, Rohde & Schwarz Handels-GmbH;
Greece, Marios Dalleggio Representations, Athens;
Iran, Berkeh Co. Ltd., Tehran;
Israel, Eastronics Limited, Tel Aviv;
Italy, Silverstar Ltd., Milan, Rome, Turin;
Kenya, Engineering & Sales Co., Nairobi;
Lebanon, Projects, Beirut;
Mozambique, Equipamentos Tecnicos, Lda., Mozambique;
Norway, Morgenstierne & Company A/S, Oslo;
Portugal, Equipamentos de Laboratorio Lda., Lisbon;
Republic of South Africa, Protea Physical & Nuclear Instrumentation (Pty) Ltd., Johannesburg;
Spain, C. R. Marés, S.A., Barcelona, Madrid;
Tunisia, Selection Internationale, Tunis;
Turkey, M. Suheyl Erkman, Istanbul;
Yugoslavia, Elektrotehna, Ljubljana;
Zambia, Baird & Tatlock (Zambia) Ltd., Ndola, Lusaka.

Tektronix United States Facilities

UNITED STATES

Tektronix, Inc., Beaverton, Oregon—Headquarters and Main Plant

FIELD OFFICES

Albany, N.Y.
*Albuquerque, N.M.
*Atlanta, Ga.
*Baltimore, Md.
*Boston, Mass.
*Chicago, Ill.
*Cleveland, Ohio
Columbus, Ohio
*Concord, Calif.
*Dallas, Texas
*Dayton, Ohio
*Denver, Colo.
*Detroit, Mich.
*Endicott, N.Y.
*Fort Lauderdale, Fla.
Hampton, Va.
*Houston, Texas
*Huntsville, Ala.
*Indianapolis, Ind.
*Irvine, Calif.
*Kansas City, Kan.
*Long Island, N.Y.
Milford, Conn.
**Mountainview, Calif.
*New Orleans, La.
Oklahoma City, Okla.
*Orlando, Fla.
Palo Alto, Calif.
Pensacola, Fla.
*Philadelphia, Pa.
*Phoenix, Ariz.
*Pittsburgh, Pa.
Portland, Ore.
*Poughkeepsie, N.Y.
*Raleigh, N.C.
Rochester, N.Y.
*Rockville, Md.
*St. Louis, Mo.
*St. Paul, Minn.
*Salt Lake City, Utah
San Antonio, Texas
*San Diego, Calif.
San Jose, Calif.
*Seattle, Wash.
*Springfield, N.J.
*Syracuse, N.Y.
*Van Nuys, Calif.

*Includes Service Center
**Service Center only

TEKTRONIX UNITED STATES SUBSIDIARY

The Grass Valley Group, Inc., Grass Valley, California—Headquarters and Main Plant

FIELD OFFICES

Atlanta, Ga.
Chicago, Ill.
Dallas, Texas
Long Island, N.Y.
Los Angeles, Calif.