

TEKTRONIX, INC. ANNUAL REPORT  
38th Year, May 26, 1984

**Tek**

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*Tektronix, Inc.*  
Howard Vollum, *Vice Chairman,*  
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*Reed College*  
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*man, Portland General Electric Co.*

## **MANAGEMENT**

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Willem B. Velsink, *Executive Vice*  
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*President and Chief Financial Officer*  
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Philip J. Robinson, *Vice President*  
R. Allan Leedy, Jr., *Vice President,*  
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Kenneth H. Knox, *Treasurer*  
Bill J. Robinson, *Controller*  
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*Secretary*  
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*Secretary*  
Barbara J. Block, *Assistant*  
*Treasurer*  
Fletcher C. Chamberlin, *Assistant*  
*Treasurer*

## **Shareowners' Meeting**

The annual meeting of shareowners of Tektronix, Inc., will be held on Saturday, September 22, 1984, at 9 a.m. Pacific Daylight Time, in the Assembly Cafeteria Building, S.W. Karl Braun Drive, Tektronix Industrial Park, near Beaverton, Oregon.

## **Exchange Listings:**

New York Stock Exchange  
Pacific Stock Exchange

## **Transfer Agent and Registrar:**

Morgan Guaranty Trust Company of  
New York, New York

## **Indenture Trustee:**

Citibank, N.A., New York

## **Corporate Office:**

Tektronix, Inc.  
4900 S.W. Griffith Drive,  
Beaverton, Oregon

## **Mailing Address:**

Tektronix, Inc.  
Beaverton, Oregon 97077

## **Telephone:**

(503) 627-7111

## **Tektronix 1984 Income Highlights** in thousands

52 Weeks to May 28, 1983		52 Weeks to May 26, 1984		Increase (Decrease)		
\$1,124,000	100%	\$1,416,000	100%	\$292,000	26%	Customer Orders, some of which were
253,000	23%	338,000	24%	85,000	34%	Unfilled Orders at year-end.
\$1,191,380	100%	\$1,331,309	100%	\$139,929	12%	Sales Revenue comprised of
526,681	44%	564,220	42%	37,539	7%	Instrument products,
455,336	38%	527,293	40%	71,957	16%	Design and Display products, and
209,363	18%	239,796	18%	30,433	15%	Communications products—sold to
734,223	62%	861,295	65%	127,072	17%	United States customers, and
457,157	38%	470,014	35%	12,857	3%	International customers.
12,601	1%	16,258	1%	3,657	29%	Other Revenue from non-operating sources.
\$1,155,267	97%	\$1,229,597	92%	\$ 74,330	6%	Less Costs and Expenses to be paid
613,637	51%	597,539	45%	(16,098)	-3%	To Employees who design, produce, sell
						and service products or who support
						their efforts;
448,807	38%	550,940	41%	102,133	23%	To Suppliers for materials, components,
						supplies, services and the use of their
						property and funds;
26,113	2%	6,581	1%	(19,532)	-75%	To Governments as taxes in the United
						States and abroad—and to provide
66,710	6%	74,537	5%	7,827	12%	For Facilities depreciation which allows
						for the use, wear and aging of buildings
						and equipment.
\$ 48,714	4%	\$ 117,970	9%	\$ 69,256	142%	Resulting in Earnings to be reinvested in the
						business and for dividends to share-
						owners.
\$ 2.57	100%	\$ 6.15	100%	\$ 3.58	139%	Earnings Per Share based on average shares.
1.00	39%	1.00	16%			Dividends Per Share paid to shareowners.

## **Tektronix Business**

Since its founding in 1946, Tektronix has played a major role as a supplier of tools that contribute to the advancement of technology. The company develops, manufactures, sells and services a broad line of electronic measurement, display and control instruments and systems that are used worldwide in science, industry and education.



## Getting There

Like a stuck gauge needle, Tektronix earnings for three years refused to kick loose. The economy improved, and orders increased; the needle did not acknowledge it. We re-did our organization, put out exemplary new products. Our manufacturing got better.

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***T*ektronix had undergone a long parenthesis in its growth. This year's earnings are the first payoff from three years of hard work and massive company changes designed to make us more profitable. Now, once again, we have a sense of momentum. It has been a long wait for the first results (and sometimes we felt near to overdosing on change). We would like to acknowledge the help we have had along the way.**

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Now, finally, the needle has moved; earnings are up. Not enough, but well up. It's about time.

The increase is the first payoff from three years' hard work and massive company changes designed to improve our profitability. Our past reports have discussed many of them with you.

These three years have been rough going. We'd like to acknowledge the help we have had.

Our employees have been remarkable, through mighty anxious times: Frank in their opinions, positive in their criticism, cooperative despite their impatience, upbeat under duress. They have taken on new responsibilities, learned new skills, moved to new locations, drastically altered the pace and direction of their work lives. They've put up with a lot.

Many of you shareholders also have expressed confidence that we were doing the right things. And, among our strongest rooters have been our customers.

Tek felt at times that it was about to overdose on change—technological,

organizational, economic, you name it; even so, we drew as much fire for moving too slowly as for moving too fast. Toffler, in *Future Shock*, warned of the effects of attempting too much change all at one time. We could see what he meant; the organization was straining.

Tek management seeks regular and frequent face-to-face communication with employees. So we've gotten an earful. They have voiced not only support, but also concern and impatience (after all, it was *their* company we were changing). And anger. Sometimes because they didn't understand what was happening. Sometimes because they did.

Well, we had it coming. Hindsight suggests that management should have decided earlier to decentralize. Probably we should also have been more adept at deciphering the cryptic signals of the US economy. The future did not arrive on time. Profitability dropped too low. Overcapacity proved to be a costly luxury. Because of pilot error, and through no fault of their own, some employees lost their jobs.

The question arose: With all these changes, will Tektronix culture not be altered also? There was no shortage of opinions. Tek *has* changed, said one view; it's not a "people company" any more. Tek *never will* change, said another; it's too soft on people to build in the necessary disciplines. Management has tried to make balanced choices between these unlikely extremes.

It has been a long wait for the first results, even for those of us who knew the remedies were in place and likely to work. Agonizing, probably, for those employees who saw only that their lives were being changed around.

But we're getting there. The corrective programs are beginning to take effect.

Our successful young products have their best years still ahead. Technology is moving from lab to product to market faster than ever before. Our product groups, from divisions to Skunkworks, are recreating the feisty vitality of early-day Tek. The manufacturing focus is on



fine-tuning processes, so things are done right the *first* time. Inventory improvement is showing how strongly it can impact earnings. New kinds of Tek organizations, from outside spinoffs to in-house "startups," are providing additional avenues for technical creativity and courage. And, since downturns may again happen, we've devised a practical program to forestall the need to "solve" problems with layoffs.

We are not yet where we want to be. We are still somewhere en route. Earnings have yet to reach an acceptable level. Manufacturing must become far more efficient. We must hand still more responsibility and freedom to our small, effective business units. We must find, and empower, our champions.

The US economy does what it pleases. So it may be premature to count on its continued health. If so, and if there is still more tunnel ahead, we are ready for it. Strong, increasingly confident, your familiar company is in many ways rejuvenated. Once again, there is fire in the boiler.

## Re-Ignition

*Pre-tax earnings* up 77 percent; *net sales* up 12 percent; *orders* up 26 percent.

Now, *that's* more like it.

Tek had undergone a three-year parenthesis in its growth. We had to throttle back because of US and world economic anemia, scrappier competition and the need to devote attention and money to a sweeping internal overhaul.

Now, once again, we have a sense of momentum. A sense, too, of optimism; the year ahead looks pretty good.

We're going to use pre-tax earnings as the relevant measure this year, since our earnings figure alone has a whopperjawed look—with some unusual causes.

The earnings increase was 142 percent. However, a large chunk of it resulted not from things we've done this year, but rather from the US

Government's change of mind on tax policy.

The long and short of it is this:

In 1972, to boost US balance of trade, companies were allowed, in effect, to defer a portion of their taxes on profits from export sales. The idea was to spur the growth of exports; the Government accepted less in taxes in return for an improved trade balance.

To do this, companies set up special subsidiaries called Domestic International Sales Corporations. But most US trading-partner countries objected to DISCs, claiming they were unfair incentives, in violation of international trade guidelines. Congress has now agreed, setting up more-acceptable export incentives and abolishing DISCs as of January 1985.

It has also ruled that companies affected do not have to pay the deferred DISC taxes. In our case, they amount to \$32.8 million. Following good accounting practice, we'd treated most of the deferred tax just as if we had paid it—as a subtraction from earnings. Elimination of the deferred account adds to our 1984 earnings; it offsets our tax obligation for this year. The enhanced earnings figure will distort all comparisons, not only with last year but also with next year.

There is another reason the earnings increase over last year is skewed to the high side. A year ago, we booked the full actuarial cost of our early retirement program, subtracting 59 cents per share from 1983 earnings—and widening the year-to-year difference.

A partial offset was our payment this year of \$5 million as the result of a dispute with the US General Services Administration. That cut into the year's earnings by about 8 cents per share.

We should note that, in any year, you will see some non-recurring items like these. They are simply the lucky ups and downs of doing business.

If we expunged the plus-and-minus impacts of these three major ones, our increase in earnings over last year would still be a respectable 45 percent.

It was a slam-bang final quarter, one that felt like the old days. It hoisted 1984 *earnings* to \$85 million, compared to \$49 million the year before. (The 1984 figure excludes the DISC-tax reversal, which brought the total to \$118 million.)

*Sales* came to \$1.331 billion, up from \$1.191 billion. The *US portion* grew 17 percent, to \$861 million, from \$734 million last year. It accounted for 65 percent of this year's total, compared with 62 percent last year. *International sales* increased 3 percent, moving to \$470 million, from \$457 million.

*Earnings per share* increased 77 percent, to \$4.44 per share (excluding DISC tax), compared to \$2.57 per share a year ago. Including the DISC tax, the figure was \$6.15 per share.

*Incoming orders* were exceptional, totaling \$1.416 billion, well surpassing the previous year's \$1.124 billion.

*Unfilled orders* increased to \$338 million. Last year at this time they stood at \$253 million.

Cost of sales went down, as a percentage of sales.

That deserved its own paragraph, since it is our first such decline since 1977, and a welcome sign. It decreased from 51.7 to 50.5 percent of sales.

The figure would have dropped even more had we not had \$31 million worth of excess and obsolescent inventory. The costly writeoff resulted partly from our new products replacing our old ones so fast. But only partly.

The writeoff dulled the impact of the excellent inventory reductions we made this year. And it was disheartening to the employees involved—like getting a \$1000 raise, only to find that's a \$500 clunk you hear in your car.

## LIFO Goes Positive

This year our LIFO method of inventory valuation had a positive effect. That's a switch. In the past, LIFO (last-in, first-out) has



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**T**he real heroes in this story are the people on the hybrid circuit manufacturing line (left). They took it upon themselves to increase the yield of the time-delay hybrid circuit for Tek's 1240 Logic Analyzer (top right) when original projections were for a 50% yield. By the time the people on the line got through, the yield was 99%. "Just-in-Time" manufacturing techniques are evident in the clutter-free area and scheduling board. The hybrids, gold-bond wired to a circuit board (lower right), form the heart of the 1240 Logic Analyzer.

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decreased our inventory value, causing a negative impact on earnings.

LIFO is conservative accounting. It assumes that the cost of a part when used is the cost of the last identical part bought. That prevents things in inventory accruing dollar value just by sitting out inflation on the shelf.

So, when you eat into inventory, as we have now begun to, it gives two benefits: Fewer parts and increasingly less-expensive ones.

The positive impact of LIFO

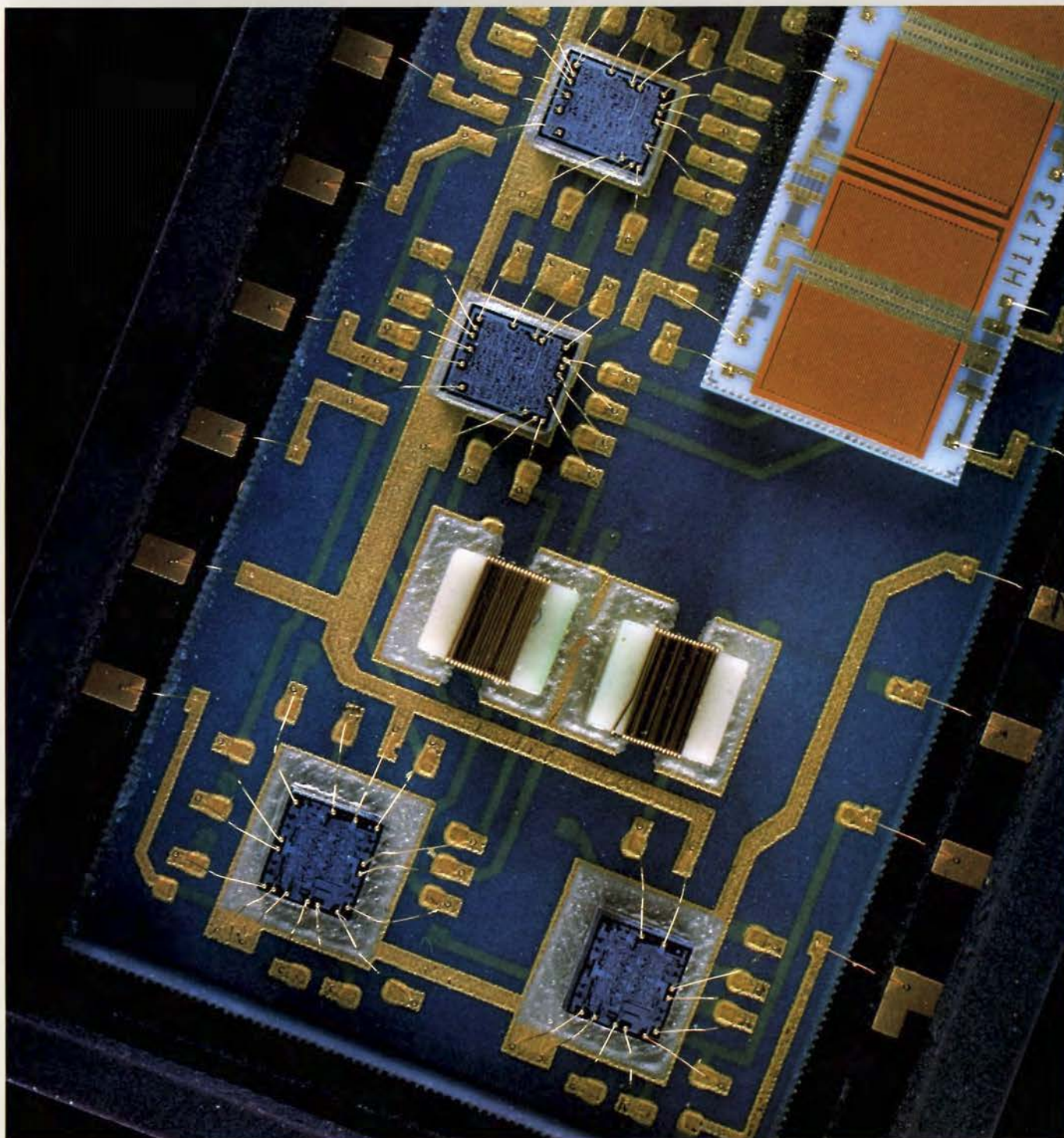
on this year's cost of sales was about \$5 million.

### ***Making up With GSA***

It's not just this year; Tektronix and the US General Services Administration have seldom seen eye to eye on the matter of discounts to government customers. So the matter was probably bound to come to a head.

We made the \$5 million payment noted above without admitting error on our part, but in lieu of pursuing the complex issues in court. Win or lose, we would not have been able to







serve our many government customers during the dispute. We like to get along with everybody; we hope the GSA settlement marks the start of harmony, such as we enjoy with other customers.

### ***Sales Highlights***

The market loved our products. Of

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***A full third of this year's sales were from our new products. We have re-established Tek as the world's leader in graphics, set the new standard for portable scopes, even prevailed against the strong US dollar overseas. Sure, the competitive world is going to get tougher. But the year ahead? It looks pretty good from here.***

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the total sold, about one-third were new ones, those in their first year of sales. That's about twice our normal percentage. (If you were wondering about those increased engineering expenses in the last couple of years, this is what we were up to.)

We had high hopes for the 4115B and Unicorn graphic color terminals. But not high enough. They captured their intended market, and then some, establishing Tektronix once again as the world's leader in graphics. Our low-cost inkjet printer proved to be a popular companion for the Unicorn; its sales also were excellent.

Our 2400 family of oscilloscopes offered giant performance in a classic portable package. It set the new standard, as we had expected. (We also set the old one.) In number of units sold, it became the top freshman product in Tek history.

The spectrum analyzer market is heating up, and Tek is taking more of it. This year, our new state-of-the-art 494 gained more ground for us.

The well-established and incomparable 7000 family of lab scopes enjoyed a good increase in sales.

The 110S frame synchronizer helped lead our TV products to a good year. So did the Grass Valley Group, our California subsidiary, which strengthened its world-leading position in TV signal trans-

mission, routing, switching and special-effects equipment. It had its best year ever.

Internationally, the US dollar continued strong, blunting all our overseas sales. In the portable oscilloscope market, where domestic competition is fiercest anyway, the husky dollar hurt us worst.

It's not just the strength of the dollar (it was stronger a dozen years ago, when rates were fixed) but the rapidity of change that is so wearing. An Italian customer will remember that, just three years ago, our portables cost half as much in lira as they do now.

Product superiority can carry the day, for a time. But, like waves licking away at a bank, each strengthening of the dollar may cause another customer to conclude the US-made product has finally become "too expensive."

So it's tough. It is a high tribute to the value built into Tek products that we do continue to increase our sales despite the current monetary handicap.

International sales have done well, considering the dollar's strong cycle. In three of the last seven years, they have outstepped the US in growth.

On balance, "frontier" products, such as our design-automation tools, fared best this year abroad. Customers invested in newer kinds of equipment rather than traditional ones like scopes.

In the year ahead, we expect to do well once again. That's even despite tougher competition and the potent dollar, and the fact that most foreign economies are showing little bounce.

As in the US, our single "European operation" has decentralized. Now, six geographic areas link independently to Beaverton: Germany, France, UK, North Europe, South Europe and Ampac (the Americas/Pacific.)

### ***Making Layoffs Obsolescent***

We noted last year our intent to remove "layoff" from our dictionary. This year we've set plans in place that should at least put the word at



the bottom of the page, followed by the phrase, "very rarely used."

The program is pre-emptive. We will employ a combination of buffers aimed at enabling full employment except in case of extreme economic downturn—that is, a business contraction more than twice anything we've ever known.

The buffers include stepped-up new-product activity, to combat cyclical recessions; more use of subcontractors and temporary and part-time employees to handle peak demands, and more-restrained hiring of staff. Add to these our normal attrition—and the buffer provided by profit sharing itself, which reduces expenses when that's most needed.

The 1983 employee reduction lingered briefly this year; a handful of people on the recall list were terminated. We hope this is the last echo of a painful time.

As we continue to decentralize and re-form, imbalances occur in the work force. We have revised our reassignment policy to protect newer employees and improve manager accountability.

If an area has too many of a given job skill, all people in that category are placed in a pool and given priority for placement in other jobs. The way it has been, newer employees are simply reassigned; the manager keeps the most-experienced employees.

Now the responsibility is where it belongs. The manager who builds in overcapacity risks losing his or her most-, not least-experienced employees.

### **No "Brain Drain" Here**

People come and people go. The latter seem to have much more news value.

Tektronix has over the years drawn to it outstanding men and women—never more, perhaps, than now. We have never had better technical and professional strength. Typically those who join us do so with no special notice taken of it.

But when people leave, that is something else again. This year Tek

has proven to be a reservoir of talent for a number of small start-up companies. The press has duly noted the fact.

Of course, losing competent people can hurt. Yet, as they leave, new opportunities open to challenge comers in the organization.

It happens, in any company. To those who prefer the atmosphere and future offered by a startup operation, we typically wish them well. For one thing, they are very likely to become our customers someday.

We continue to attract exceptional people. And we retain most of them for long tenure. By no means are we running a flow-through operation for the best and brightest.

We might also note the number of those who leave Tektronix, size up the outside world and return. The resulting perspective can enrich both them and us.

A somewhat related item:

A current best-seller features what, in the opinion of its three co-authors, are the 100 best US companies to work for. The book includes Tektronix. Well, thank you. We try.

### **A Turn for the Better**

As to the new year upon us, things look pretty good. Orders are hitting a record pace. Yet our president cautions against "gold fever"; that is, over-optimism.

For competitors will continue to increase; there will be more of them, and they will get better. We expect to hear much more, for instance, from the Japanese.

As the US dollar continues to increase its muscle, foreign producers gain an ever more enviable pricing edge, particularly in their home markets. Not much seems likely to greatly weaken the dollar, short of the world blowing up or the US economy caving in; no one would wish for either.

Also, high-tech spinoffs and startup companies are increasing. They may compete with us not only for small but promising market segments of their own choosing; but also for investors and for top people—

some of whom may now be working here.

And in-house—in spite of much progress this year—our manufacturing is not yet the world-class operation it must become.

Now, all that having been said, we still expect a solid performance in the coming year.

First off, the improved US economy ought to carry through our coming year. But other, more substantial, factors cause our optimism:

*Our Product Line is Young.* As noted, a third of our sales were of new products. If history is a good indicator, they've yet to hit the strongest part of their growth curves.

*We're Making Better Use of Technology.* Innovative components are finding their way from lab to market faster.

Also, we're learning how to make our technology pay its own way. Our Strategic Program Units, which act for all the world like startup companies, have two jobs. They develop advanced components, and they sell them to outside customers also. This shared development cost means we can afford to pursue more promising technological roads than before.

*Manufacturing is Doing Much Better.* Some cycle times have been cut in half; some have been slivered to a tenth. Labor content of products is dropping. Inventory turnover has improved for four straight quarters. We are certifying outside vendors to make sure we both start with good parts and get them on time.

*Yet It Still Has a Long Way to Go.* A funny-sounding plus, perhaps. Yet, there being so much room for improvement means there is an opportunity for further large cost reductions.

*Managers are Maturing.* Many managers were new in their jobs a year ago. They've now doubled their experience in a divisionalized setting. But there is more to maturing than just time passing. We are choosing managers more carefully,

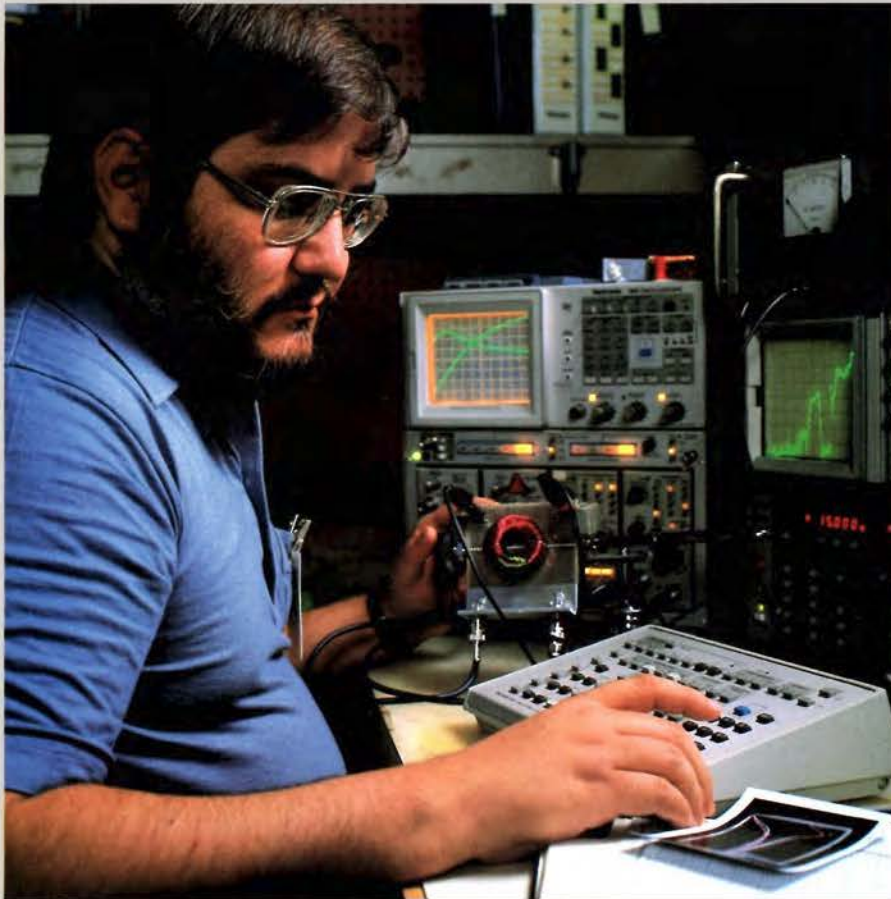


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*Sometimes amid all the high tech complexities, getting back to fundamentals is best of all. When innovations on existing technologies led to diminishing returns for spectrum analyzer engineers, they turned to the fundamentals of engineering, physics and metallurgy for new approaches to design and*

*manufacturing. The engineers designed the electronically tuneable filter (lower right) used in the 494 Spectrum Analyzer (top right), and used powdered metallurgy to improve manufacturing. The “back to basics” movement continues in the lab (left) with materials permeability testing.*

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with emphasis on process knowledge. They *understand* the work they are managing.

We have, however, missed the counsel and leadership of the many managers who opted for early retirement last year.

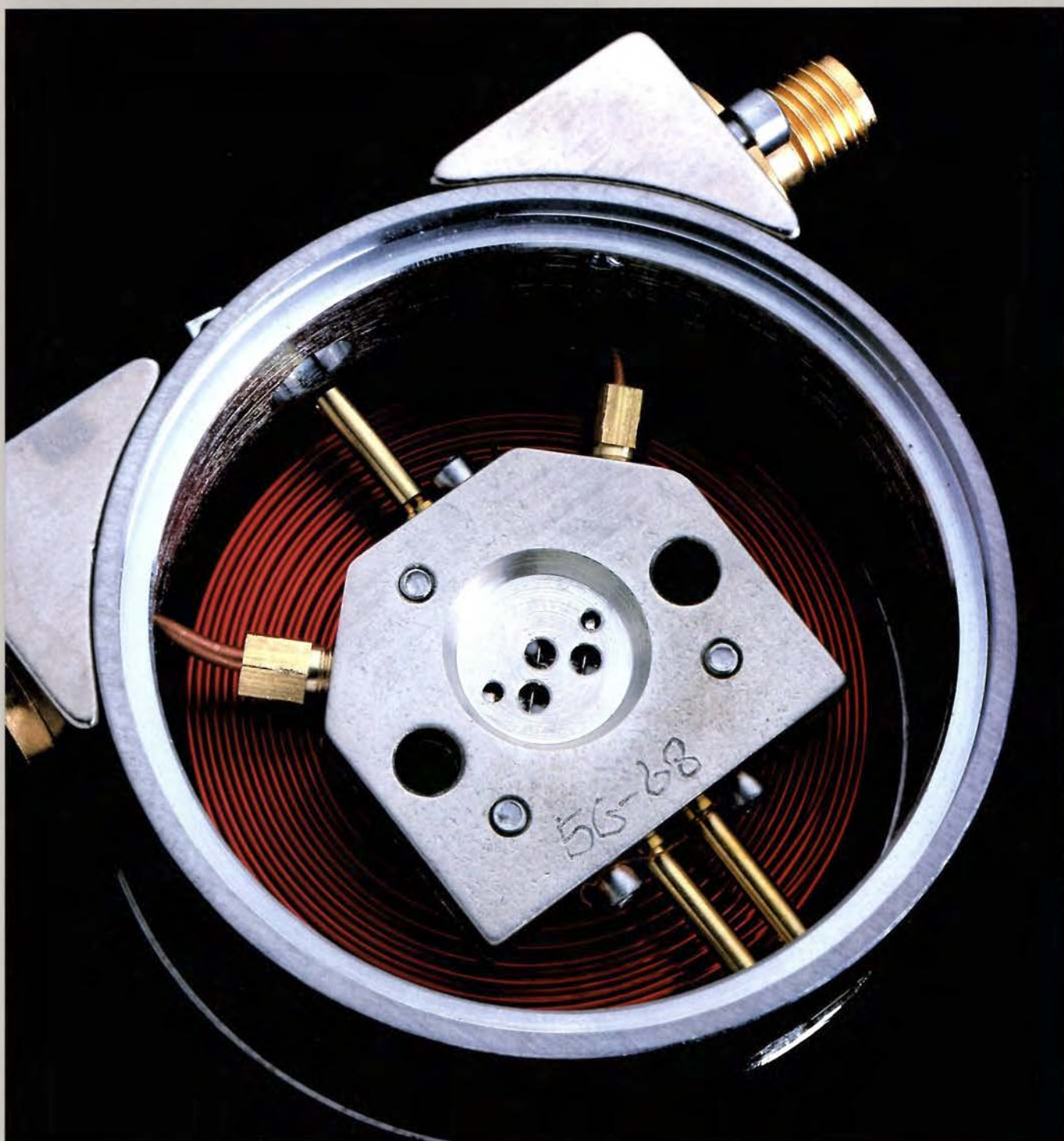
*Etc. etc. etc.* Underpinning all else are the basic Tek strengths that are true in any year. By now, you probably can recite them yourself: Financial strength; first-class facilities, all we will need for some time; quality levels that enable product warranties we believe are unmatched anywhere.

And an enviable reputation that opens many doors. You have no idea, said an employee who left and returned, how different things are when you have another company's name on your calling card.

### ***Tektronix, in Brief:***

Tektronix is one of the world's two largest electronic instrumentation companies. We investigate advanced technology and put it to use in a very wide range of products and components. They are basic tools, of the broadest usefulness. Technical progress, worldwide, would founder







were it not for such enabling products.

Our markets have matched, step for step, the growth and increasing sophistication of human activity. Over 50,000 commercial customers now share our product output. None of them overshadows all the others; the largest accounts for roughly 4 percent of our sales.

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***T***ektronix products have matched the growth and sophistication of human activity. They are electronic tools of the broadest utility; we can't think of a field of endeavor that doesn't use them. Technological progress, world-wide, would founder were it not for such enabling tools. We seek always—in every product—to bring something unique or significantly new to the market.

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Our products find use in research, design, production and testing. We can't think of a field of endeavor that doesn't use them.

You'll find Tektronix products are usually first or second in sales. We shy away from "me, too" products—those built just so we will be in a given market; we seek always to bring something unique or significantly new to it. Tek is known for technical innovation and high product value.

Our first product was the cathode-ray oscilloscope. We've led the world in its production and sale since our first years. In the 37 years since, it has remained the basic tool of the industry. Many companies now produce scopes; they are sometimes said to be almost a "commodity." But that is true only of the low-to-medium segment of the line. At the upper end, embodying high performance and newest technology, there are few competitors.

Some other Tek products began as interchangeable plug-ins for our scopes, then grew to be instruments of their own. Two such are spectrum analyzers and logic analyzers. Some scopes took on special functions; that's how our television waveform monitors came to be.

We're a world leader in graphic terminals and their peripheral equipment. That product line grew out of display techniques learned in oscilloscope CRTs.

Our major products also include microprocessor-development systems and other aids for designing software. We also produce software ourselves, to aid in the operation of our products or to fit them to specific applications.

The Grass Valley Group, our California subsidiary, is the premier manufacturer of TV-signal switchers and signal-transmission systems, and special-effects equipment.

*Instrument Products* include oscilloscopes and their plug-ins, modular instrument systems, pulse generators, semiconductor curve tracers, amplifiers, power supplies—and accessories, including probes, isolators, mobile scope carts and waveform-recording cameras.

*Information Display Products* include graphic color terminals, graphic computing systems, hard-copy units, inkjet printers and plotters.

*Design Automation Products* include logic analyzers, microprocessor-development labs and semiconductor test systems.

*Communications Products* include those for the television industry: Grass Valley Group switchers and equipment for special-effects and signal transmission; as well as waveform and picture monitors, vectorscopes, frame synchronizers and signal generators. Other than for television, communications products include spectrum analyzers and metallic and optical cable testers.

These were the sales of each product grouping for the last five years, also expressed as a percentage of company totals:

*Instrument Products*

1980	\$504,380,000	51.9%
1981	\$507,630,000	47.8%
1982	\$567,994,000	47.5%
1983	\$526,681,000	44.2%
1984	\$564,220,000	42.4%



#### *Design Automation and Information Display Products*

1980	\$327,078,000	33.7%
1981	\$391,149,000	36.8%
1982	\$441,420,000	36.9%
1983	\$455,336,000	38.2%
1984	\$527,293,000	39.6%

#### *Communications Products*

1980	\$139,848,000	14.4%
1981	\$163,055,000	15.4%
1982	\$186,334,000	15.6%
1983	\$209,363,000	17.6%
1984	\$239,796,000	18.0%

We sell more products to makers of electronic and electrical equipment than to any other market. Second largest customer group is the computer industry. Local to national governments, lumped together, are third. They buy our standard commercial products.

Next, in order, come education, instrumentation companies, then the wide range of commercial and industrial television.

Up-and-coming customers include the chemical, medical and publishing fields; energy-producing companies, and transportation agencies and businesses. The list goes on and on—but not here.

Our motto, "Committed to Excellence," guides us. To gain product excellence, we have often decided to manufacture many of our components. Some of those might now be available elsewhere; but critical ones will always require in-house supply. A giant advantage it gives is the ability to optimize both product and component during design.

## **The New Products**

### **Graphics; Playing Catch-up and Winning**

The top story of the year had to be the rebound of our Information Display Group. It retook the leadership in computer graphics, a spot it had held until the '80s, when our over-reliance on direct-view storage tubes impeded efforts to develop color terminals.

The knock-your-socks-off success of the 4115B terminal leaves no

doubt that Tek is again the company to beat. The 4115B, offering the world's outstanding color graphics, became the top-dollar-volume new product in all of Tek's history.

It so far exceeded our high-side predictions that we even had to reprogram the IDG order-analysis system. (It didn't have enough digits to accommodate the order total.)

We not only halted the erosion caused by Tek customers straying to other products; we also regained some we thought were "lost."

We aimed our 4115B sales efforts at mechanical CAD (computer-aided design). We were heartened to find it also very well received in the field of *electrical* design.

They'd told us that the field needed more speed, more performance. However, they hadn't seen the 4115B, only read the conservatively stated specs in our ads. The product was far more impressive on the job than on paper.

We made a bigger dent in the OEM area than we had expected. That's good; it suggests we really have something. Companies purchase OEM components to sell as part of their own products or systems. They're not likely to buy things that they could hope to build themselves.

Tek got a good jump on competition, too. Real challengers didn't show up until this spring.

The 4115B is doing well in both Europe and Japan. In the latter country, the good news is that competitors are using it as their benchmark to beat. That is also the bad news.

Take a Tek terminal, any Tek terminal. Unplug it, and plug in one of our advanced models. All the software works. This upward compatibility is a potent feature. It gives a customer the newest technology at a low conversion cost.

At the lower end of our line, our Unicorn family was doing spectacularly also. The lowest-priced model, the 4105, lived up to our expectations; we say it "met plan." The higher-resolution 4107, richer in features, outran our forecasts; we say it "exceeded plan."

(Like comedian George Carlin,

who asks whether "Jumbo Shrimp" means a big shrimp or a small jumbo, you may wonder if "exceeding plan" means high sales or cautious planning. In this case, our plan for the 4107 was for a strong year; it did much better than that.)

Customers who buy 4105s are rapidly migrating (upgrading) to 4107s. Orders for it—for all Unicorn models—are accelerating.

We sold well into our traditional market, design engineering, and are entering new environments; one, the business office. Government agencies are among our steadier customers.

Our 4695 inkjet printer also is a hit; we are selling two for every three Unicorns.

A hard-to-believe 60 percent or more of IDG business is coming from the year's new products. Having such a youthful, hotshot line bodes well for the near future.

Has our old and profitable standby, the direct-view storage tube, been retired? By no means. Recent OEM interest suggests it will continue to have uses, including as a component of personal computer systems.

Traditional graphic-terminal makers are hardest hit by our product onslaught. Another, growing competitor is computer manufacturers who are now moving into the terminal market. For the time being, we have them in price/performance. But they'll be a tough nut; and the lead has changed before.

So we're making good use of our headstart. The fount of new IDG products is bubbling:

■ The first Tek-designed inkjet color copier has just been introduced. It is the second generation of last year's successful 4691, which used many purchased OEM components. The more-compact 4692 offers just as sharp an image, better performance, better reliability, denser color and better paper-handling ability.

And it will cost roughly half what the 4691 did.

A companion, the new 4510 rasterizer, turns CRT vectors into a raster (multi-line) format that will



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*Just like an automobile that gives itself a tune-up while it's running, the 4115B computer display terminal (top, right) automatically refocuses while it's operating. Tek engineers developed this first-of-its-kind feature, called "auto-convergence." It's particularly handy with the 4115B's high density*

*diagramming, and its "zoom" capabilities where parts of the screen are selectively enlarged. At the magnification of the zoomed section (lower right, inset), the full cathode ray tube screen would cover half a football field. To meet increasingly stringent international standards, the 4115B is tested for electromagnetic noise in an "anechoic chamber" (left) at Tek.*

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give copies the highest resolution the copier permits—up to 154 dots per inch. (Most terminals contain their own vector-to-raster converters, which limit copies to the much-poorer resolution of the screen itself.)

The rasterizer yields copies with about twice the resolution of the image on the terminal.

The 4692 offers impressive color saturation. For instance, most copiers combine three colors to produce a murky "black." Ours is a true black, velvety intense.

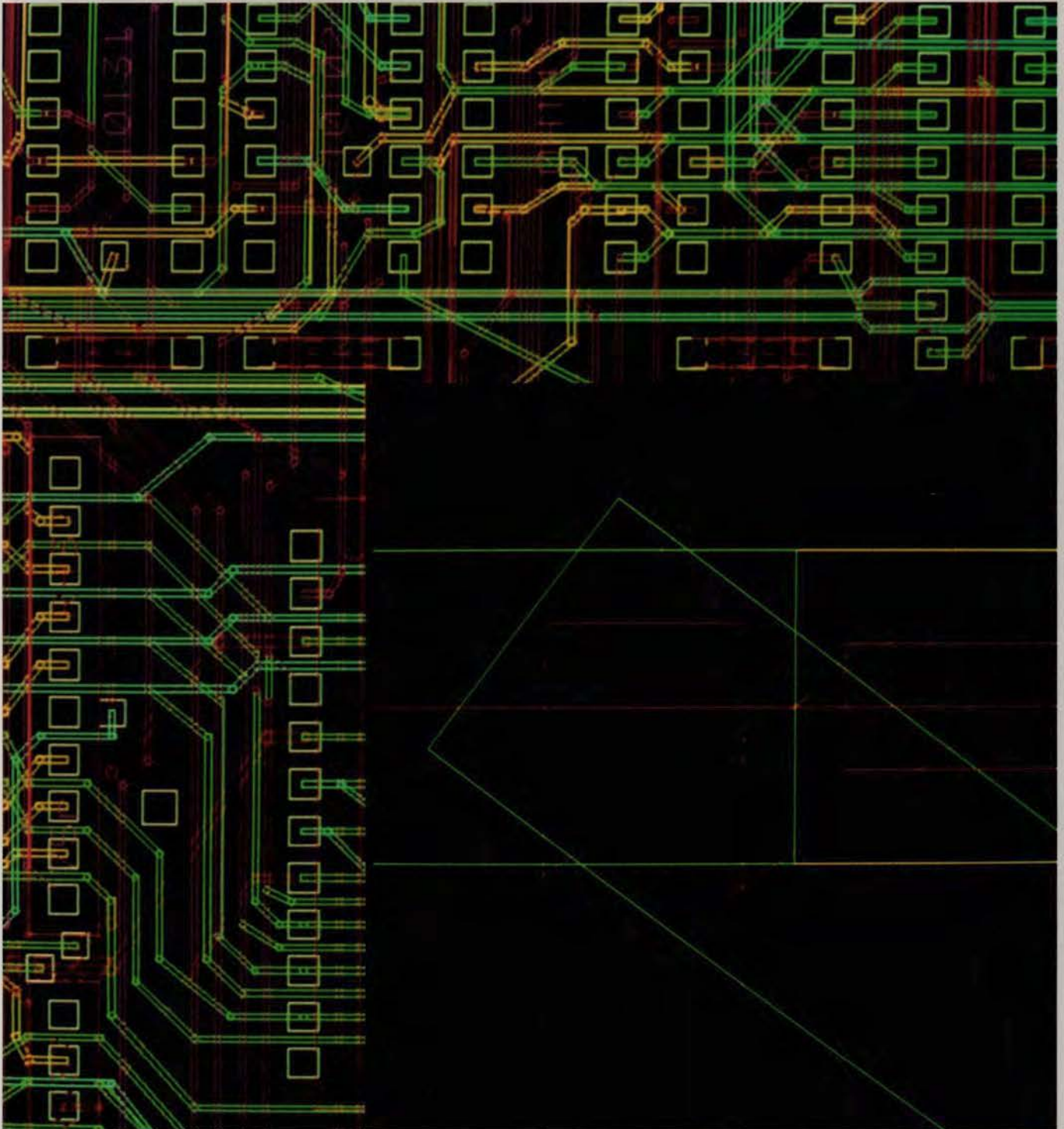
■ The owner of a new 4115B can now work with three-dimensional

displays, converting the screen images to 3-D for only the cost of an upgrade kit, just out. The 4115-F58 makes possible "wire-screen" (skeletal) images, which can be rotated, enlarged and manipulated in the widest variety of useful ways. We have a large ready-made market, thanks to the great popularity of the new 4115B.

### ***A Strong Year—Again— for Communications***

A boom year for our Communications products was highlighted by the super performance of The Grass Valley Group; good response to our







110S frame synchronizer, and introduction of a pace-setter spectrum analyzer.

The 110S orders included many large ones. One network, now putting in earth stations for all its affiliates, will distribute its programs in the 110S synchronization. Our state-of-the-art product coherently times unrelated television signals to

over telephone lines. Our customer list includes all Bell operating companies.

Grass Valley continues to lead the world in TV routing and production switching equipment. What we believe to be the largest routing switcher ever built will be installed by winter at Cape Canaveral. It will monitor all NASA space-shuttle launchings. The giant GVG system, working much like a central telephone exchange, will accept input from 192 video sources, and route it to 512 separate viewing stations.

Production switchers are another story. They are master-control, or directorial, tools, essential when creating a studio program.

Acceptance of our new 1600CV component video switcher has been very strong. And the new, compact model 100, introduced in May, marks GVG's first foray into the commercial market. It is aimed at educational and industrial TV production. Early orders are about twice what we'd figured on.

When you see weather graphs on the network news, or geographic ones during election coverage, you may be viewing the work of Dubner Computer Systems, Fort Lee, N.J. In April it became a Grass Valley subsidiary. The Dubner name is a leading one in video graphics. Much of the artwork broadcast during the Olympics was Dubner's doing also.

Tektronix will receive an "Emmy" in September. The coveted statuette, top award of the National Academy of Television Arts and Sciences, honors our "continued excellence in television test, measurement and monitoring equipment." It is identical in looks and prestige to the statuette given actors, directors and writers.

Tek is one of five recipients. A winner in a previous year was Dubner Computer Systems.

### ***Spectrum Analyzers: New Gains in a Quicken Market***

Our 494 spectrum analyzer is pushing technology forward. With its introduction, Tek gained still further in what's been called "the second hottest electronics market of the 80's" (in growth rate). It proved a

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***It was a visible year for Tek products. At the Olympic games, political conventions and shuttle sojourns, our communication products were behind the scenes. For 30 years of contribution to the TV industry, we'll receive an Emmy in September.***

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eliminate distortion. You watched its handiwork when you viewed the Olympic Games on TV.

The strong early order rate for our model 1910 digital test-signal generator continued through the year. Among its features, it enables insertion of Teletext, a video magazine, into normally unused parts of the TV signal, enabling subscribers to receive text messages on their screens.

Our Grass Valley Group celebrated its 25th anniversary. It was a good year to do so, since business has never been better.

Its Wavelink line of fiber-optic links still lacks significant competition. The products provide almost distortion-free transmission of TV audio and video signals. Sales made a giant increase; the same order of growth is foreseen for the year ahead.

With transmission changing rapidly from copper wire to optical fiber, Wavelink products are gaining in popularity. They were widely used at the Democratic Convention and the Olympics.

They come in both LED and laser versions, both short-wave and long-wave. In the year we increased tenfold the distance we can transmit an unregenerated signal, from 2.5. to 25 kilometers. Using repeaters, the distance has no practical limit. Use of optical transmission is moving from just studio operations to long-haul



worthy companion to our popular 492, whose sales once again were very strong.

Spectrum analyzers have become an increasingly major Tek product. One reason is their exceptional performance. Another is the explosion in communications, where the SA is indispensable. Third, the increase in defense spending.

The 494 has more intelligence than any other analyzer designed for field work. It has a built-in digital frequency counter. Two instruments in one, it is the only microwave SA with frequency-counter accuracy.

A screenful of radio signals can be so crowded as to become visual gibberish. It's hard to know which frequency you're looking at. The 494 is a highly selective receiver, separating the frequencies and counting only those it's tuned to. Thus it can make very fine discriminations. It has created a new frequency range for spectrum analyzers, up to 325GHz.

In field use, waveforms may be stored in the 494's internal memory, then recalled back in the lab for study.

A unique feature is its "help" mode. Operating instructions are stored in semiconductor memory—30 CRT screenfuls, or about what a 12-page manual would contain. At the push of a control button, you can find out what that control is, and how to use it.

The instructions are available in four languages—English, French, Spanish or German.

The 494 is expensive, but much less so than its closest competitor. It also weighs less (50 pounds); you could carry it by one hand. It is built rugged, and meets military specs; it is designed to work well even in mean weather and when jostled or maltreated.

The analyzer will sell to all the usual Tek customers, but will have wider lab appeal than our other models, because of its leading-edge performance.

Our OF150 optical cable tester also gained from the fast growth of fiber-

optic transmission—and from the breakup of the phone company. We believe the rugged, advanced product is the leading one in its market.

### ***Oscilloscopes: a New Standard, an Old Favorite***

The industry's new standard is now unquestionably our superlative 2400 portables family. It more than lived up to what we had counted on. We were somewhat surprised that customers tilted toward the higher-end product, the 300 megaHertz 2465; it represented well over half the sales.

In units sold, the 2400s proved the most-successful new product family we've ever built.

Two new options, just out, will expand its performance. One enables it to accept commands from a controller over a GPIB bus, and send information to it. The other option enables it to make a variety of television measurements.

Our 2200 low-cost scope family showed substantial growth also. That suggests we are more than holding our own against the many competitors from here and abroad who are clamoring for shares of the "low end."

Our 7000 family of laboratory scopes is ageless. Its earliest models go back 15 years; but there is nothing geriatric about it. By continually adding versatile new plug-ins, we've kept the family as new as the very latest technology. Most of the world's oscilloscope performance marks have been set by the 7000 series.

■ This year we added the 7A42 plug-in, which converts a 7000 model into half scope, half logic analyzer. A logic-triggered vertical amplifier, it combines the triggering ability of an LA with a scope's bandwidth and timing resolution. It can deal with four channels of data at once, and display it as a true analog picture. It looks to become very popular with high-speed-logic designers.

■ The low-frequency 5116 is the world's first color scope, thanks to our new liquid-crystal shutter. The color feature is very useful in some applications—like separating two overlapping waveforms. They look like a mess on conventional scopes.

Aimed at a small market, biomedical and mechanical measurements, the 5116 is doing quite well.

Sales of lab scopes were good, particularly of the higher-performance 7000 models. More and more of them are being used in fiber-optic communications and high-speed computers. Digital signals are getting faster all the time, demanding ever-higher performance. Our scopes have always had it; now the need has caught up with the product.

The saying, We are our own worst enemy, is true of lab scopes. Their only close competitors are the top models in our own portables line. But we should be able to handle us.

### ***A Down and Up Year for Design Automation***

Tektronix held onto first place in logic analyzers and held its own in "universal" microprocessor-design systems, those that support a variety of IC chips. But our sales growth, while substantial, undershot our goal.

Our new 1240 logic analyzer, a superb "user-friendly" product, stumbled over design problems, delaying its introduction by six months. That was time enough for a good competitor to appear on the market. Some buyers decided not to wait for us.

The 1240 is now doing well; we know of no instances in which it has lost a face-off. But the delay, and the need to get our sales force all re-fired-up, cost us.

Our microprocessor-development lab sales also have grown. But the universal MDL segment now appears unlikely to become as large as we and some other companies had guessed. The market is dominated by products built by the major IC maker to support only its own very popular chips.

This year we increased our MDL's usefulness by interfacing it with the VAX computer, the workhorse of engineering labs.



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**W**hat can you say about the 7104 "GigaHertz" Scope," which after five years is still unapproached in bandwidth and performance? Cross-trained production teams work in a top-ranked clean room, building a cathode ray tube (left) that can display information occurring in one-third of a billionth of a second. The trace appears to cross the CRT faster than the speed of light. Designing a scope with these capabilities demanded novel approaches, like the flexible connector (lower right) attaching the CRT to the hybrid circuit that drives it. The R7103, (top right) is a 7104 mainframe in a recently-introduced rack mount version.

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Some potential buyers of our products may have been sidetracked instead by engineering workstations. These new computer-aided instrument systems aim at automating the designer's job.

Not that workstations duplicate what MDLs and logic analyzers do—although some functions overlap. But they do compete for the same customers' capital-equipment dollars. And they have the plus of being new. It's normal to buy one of a new thing than another of something you already have.

Our own developmental efforts

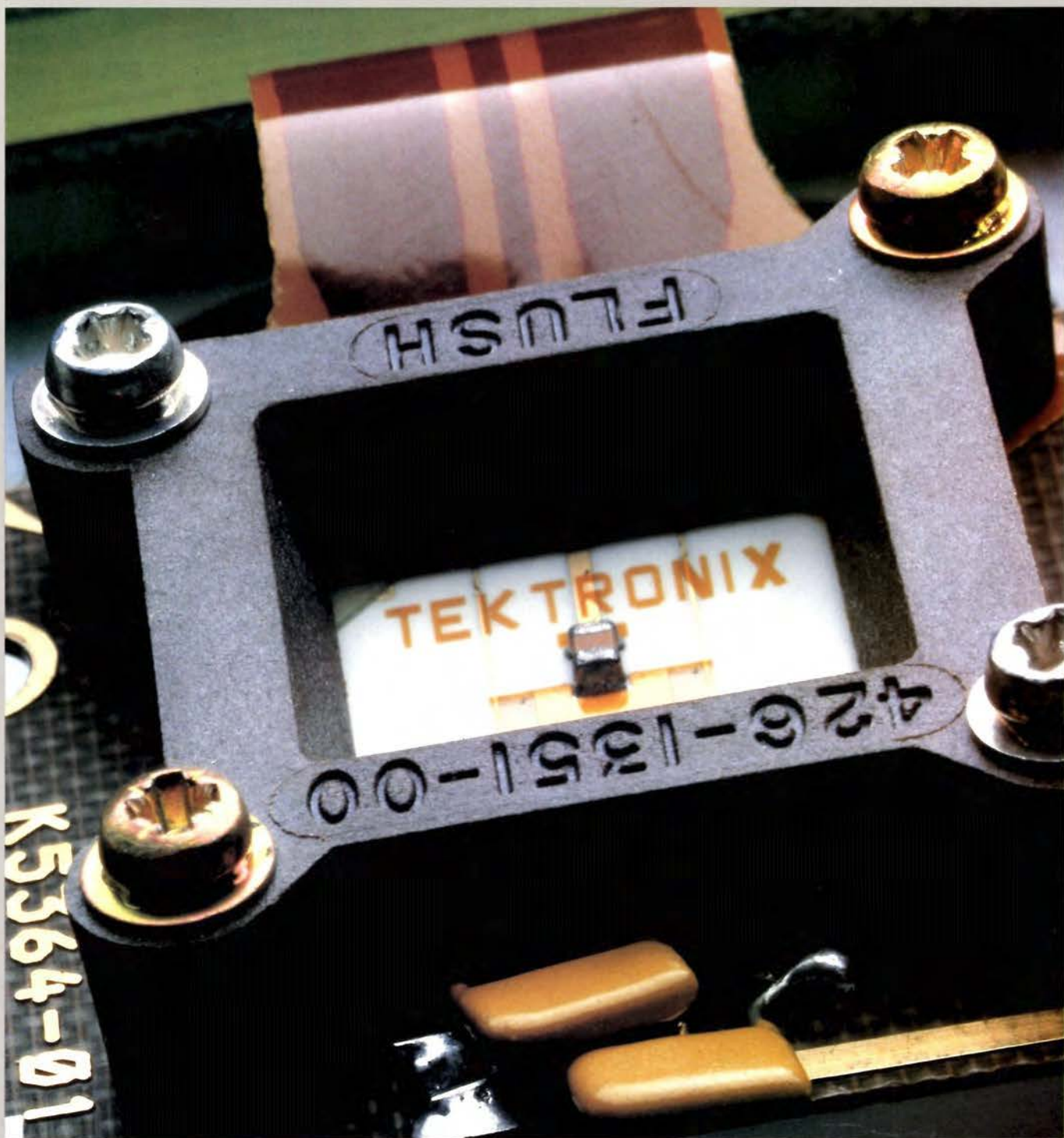
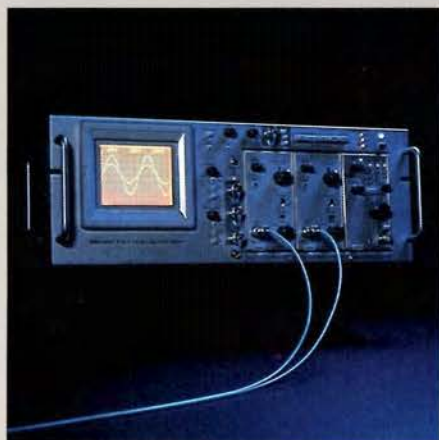
also are well along toward providing innovative ways to increase the designer's productivity. By melding the very best of Tek's technical expertise, we intend to make a unique, high-value contribution to what's bound to be a hotly-contested market.

### ***The New Organizations***

Since a company that prospers will typically grow, size has come to be seen as a generally "good" thing. But bigness also has disadvantages.

Accordingly, Tek has been subdividing into product divisions,







smaller groups better able to respond to markets and employ technology. Each year we see the effort paying off more.

Divisions are small enough to be managed well. They allow a focused sales effort. They may custom-tailor themselves to fit the market, the technology and their unique talents. They provide a training ground for

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***Is smaller better? It might seem so. From in-house groups that act for all the world like independent startup companies, to loosely chartered Skunkworks, to Tek-supported spin-off organizations using some of our excess technology, we are re-creating the feisty vitality of our own early days.***

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general managers, and a visible field of combat where product champions may fight for their ideas.

And they are small enough that individuals may see the results of their efforts.

### ***1984: the Year of the Skunk***

Tek has re-formed into Groups, Groups into Divisions and Strategic Project Units... and so on. Then you have the Skunkworks.

Skunkworks are small (typical personnel total: just a few people) and only loosely basted into the company structure. But down in the basement, off behind the boiler room, in a converted closet, you may well find one.

Working with little research, limited money and a deadline within which to come up with something, Skunkworks provide yet another avenue for the zealot technologist on fire with a product idea he (or she) thinks Tek could use. If he can convince a manager to champion the idea, he's on the way.

The Head Skunk, as it were, has to believe in the idea enough to put in added effort, work all night, scrounge his furniture, do his own janitorial—whatever his covenant with Tek provides. And to bet part of his technical career on it.

These are agile, committed groups, with high output per person. They often talk baseball; the idea is

to get a lot of at-bats, since that's the best route to a home run. That is, they are pragmatic, not theoretical; they try a lot of things.

"Skunkworks" is the current fad word for a mode of working long familiar here at Tek. We've never been one to insist on organizational rigidity. Over the decades, many of our valuable product ideas have arisen through the informal collaboration of skunkly groups.

### ***Strategic Program Units***

A national magazine once accused us of having hoarded our technology. Not the term we might have chosen, but it had some truth.

Higher profit margins in our earlier years allowed us to pursue many potentially useful technological areas. But while profit margins thinned, the number of intriguing new technologies increased. We felt much like you do when your skis start slipping downhill in different directions.

We're now finding there are creative ways to share our technology. The Strategic Program Unit (SPU) is one.

An SPU acts as much like a small independent company as our structure can tolerate. That's quite a lot—varying from one SPU to the next. Each of these entrepreneurial groups pursues a different product or technology, and may market it both outside and inside Tek. If the venture succeeds, the SPU may become a product division, a Tek subsidiary—or a group with some different relationship to us altogether.

### ***Gallium Arsenide Devices***

Our newest SPU seeks to profit from, and further lengthen, Tektronix' lead in the development of gallium arsenide devices. GaAs has great speed and power-consumption advantages over silicon, and will give it a run as a base material for integrated circuits. Its production is expected to become a giant industry. Competition is heating up; Japanese companies are hottest on our heels.

The new SPU has received its first



contracts to do foundry work, fabricating custom designs for outside companies in its new 10,500-square-foot state-of-the-art "clean room." It plans also to produce and market Tek-designed standard GaAs chips and gate arrays, for both internal and external users.

Several Tektronix product designs in the works are incorporating GaAs devices.

This year Tektronix made the breakthrough of GaAs use in LSI (large-scale integrated) circuits, demonstrating a gate array with about 7000 transistors. Well underway is a Tek chip that will more than double that density.

We have done an equally significant thing, shown that gallium arsenide is no longer a laboratory prisoner; it can be mass-produced.

Our customers include large companies, at the technological fore. That bolsters our feeling that we are in a strong leading position in GaAs.

### **Color Shutters**

Tek hoped that SPUs could get technology to market sooner than the typical two to five years. Our Color Shutter SPU just delivered its first high-volume commercial product, a seven-inch liquid-crystal shutter that converts monochrome CRT displays to vivid color. That's one year from lab to manufacture. We expect demand to far exceed initial production.

Our marketing choice was to swing users of monochrome tubes over to color, rather than try to convert users of existing three-gun color tubes to our device.

We introduced the shutter in the Tek 5116 color oscilloscope. A low-volume product by design, it was, however, timed perfectly for the debut. Some bought the scope simply as a way to experiment with the shutter.

That shutter model is already seen as old, such is the pace of our technology. We've greatly "smartened up" our manufacturing processes and methods. Cost reductions are already being planned, and our pricing will be aggressive.

We are finding enormous interest in the product, in companies who

make computer workstations, word processors, small displays for process control, analytical instrumentation and medical imaging products.

The shutter creates a range of rich colors by polarizing yellow light from the CRT into red and green components. Then, by very rapidly switching between the two, it creates what the eye sees as an intense color spectrum.

### **Avionics CRTs**

A third SPU develops and markets ultra-bright CRTs to the avionics field for use in daylit cockpits. The technical problems proved "six months tougher than we thought," causing that much delay; but a group of tubes is now being evaluated by potential customers. We expect to start limited-volume pilot production in early fall.

We're also working with a consortium of five avionics companies, who are funding development of some custom tubes. They will receive exclusive rights to the tubes for a time, after which we will be free to market them.

Now, the field of avionics display is pretty much the domain of Japanese companies. We expect to do very well against them, competing on superior performance rather than price.

### **TDC: A Win/Win Approach to Technology**

Tektronix Development Co., a wholly-owned subsidiary formed in November, is still another way we will profit from technology.

It will support the startup and early growth of two kinds of independent companies. One kind will exploit Tek-developed technology for which we foresee little internal use but high commercial value. We are a shareholder of Planar Systems, Inc., Portland, which will produce flat-panel displays that compete in some markets with cathode-ray tubes.

The second kind of company is attractive outside ventures. We have invested so far in two, both in Beaverton: ATEQ Corporation will

develop capital equipment for the semiconductor industry; and Magnatek will design and market hybrid circuits. In addition to investing financially, we'll provide technical support to ATEQ and access to our high-volume hybrid production line to manufacture the Magnatek devices.

By investing in and supporting Tek startups, we protect our investment in the technology, avail ourselves of the first chance to use it and share the profit from its sales.

As our SPUs do, spinoffs of various kinds may motivate Tek-bred entrepreneurs who prefer the startup environment and might otherwise seek it elsewhere.

Although TDC is our venture-capital arm, we intend to place emphasis on leveraging our technology rather than our money. We can offer unique or more-useful help by supplying technological or manufacturing capability, or giving technical support or management counsel.

## **The New Manufacturing**

The runner who wins a race while wearing baggy pants might wonder if the victory weren't somehow *caused* by the droopy drawers. The hard task for a company, always, is to sift those habits that cause success from those that merely attend it (and maybe even slow it down.)

Breaking our cumbersome central manufacturing into smaller plants and divisions has helped. We have begun to peer and poke at all our old behavior.

Like that of most US companies, our manufacturing for years was of a conventional sort. A master schedule allocated work in a way meant to keep people busy. To allow for faulty parts, assembly errors, rework and line shutdowns, parts aplenty were ordered, more than enough. To gain lower per-unit price, we bought supplies in large lots, made parts in bigger volumes than immediately needed. If one process had to shut



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**A**n ink chemist is probably the last person you'd expect to find at an electronics company. But for the 4692 Inkjet Printer (top right), a team of Tek chemists and physicists went to work formulating superior color intensity inks. The 4692 translates to paper what appears on the screens of our graphics terminals. We wanted results to be dazzling, and "off the shelf" inks didn't have enough depth. The ink chemists did an impressive job, and continue to mix and test Tek inks (left) to ensure proper dilution and interaction with sensitive inkjet heads (lower right). For all its spectacular color, the 4692 is half the price of its predecessor.

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down, the others had work to do. People *did* keep busy.

But this approach required increasing amounts of work-in-process (WIP) inventory. It piled up at each stage, waiting to be worked on. It took up space, cost money to store, became hard to keep count of. Even the eternal busyness of people had a negative side. Was a group overloaded? Underloaded? You couldn't tell by watching.

### ***Hello JIT, Good-bye WIP***

Say you're building a product with eight one-hour steps in its manufac-

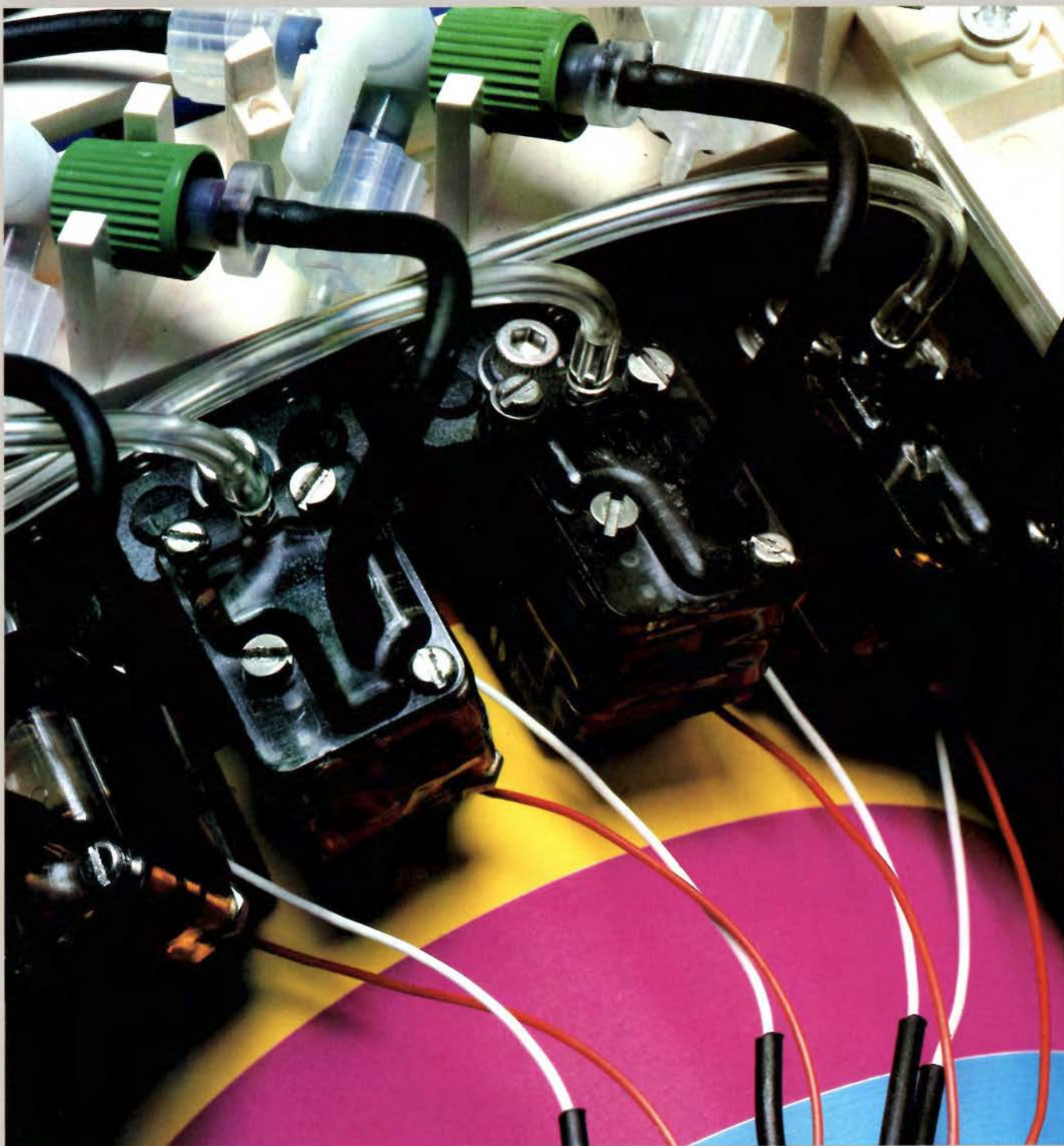
ture. You might build one complete product each day. Or you might choose to move products along together in batches, one step a day.

In either case, in eight days you produce eight products. But in one instance the cycle time—time from first part to final product—for any one of them is eight days. In the other, the cycle time is only *one* day.

And in the batch system, WIP inventory piles up at each stage.

One after another, Tek manufacturing areas are moving to Just in Time delivery of parts, and a "pull" system of production. The idea is to deliver parts *just in time* for the line to use them; then to move a product







along only when the next station is ready for it; that is, one employee "pulls" the work from another. This system requires much less WIP. Nothing much sits around, or piles up.

Although JIT means Just in Time, it might for a while have meant "jittery." Which is what many of our employees were when moving to this

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***As we warm to our new divisionalized lifestyle, we find it easier to challenge our old assumptions about how this or that should be done. We are probing at all our past habits. In manufacturing especially, this squinty-eyed look is paying off. Innovative methods are increasing our productivity, improving quality and deleting millions of dollars from inventory costs.***

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system. Wouldn't it mean people standing around, they asked? If one workstation has a problem, doesn't the whole line come to a stop?

Once in a while that does happen. But, says Fred Hanson, vice-president, Portables, it provides a tonic sense of urgency. Everyone turns to and fixes the problem. In many areas, employees are cross-trained in several jobs, able to solve it. In conventional manufacturing, all operations would continue building inventory until someone got around to correcting things.

Today, productivity in Portables is increasing daily. And problems get handled right away. Two- to three-month cycle time has been cut down to two to three weeks.

Now, we're not about to abandon hot dogs just because the Japanese prefer eel with their baseball games. But a number of Japanese ideas can be usefully applied, particularly to our US manufacturing. One we kind of like is that all inventory is bad.

This year, with JIT and a "pull" system, Portables has taken over \$24 million from its inventory.

Goal is to have a two-week cycle time—one week on our 2200-series scopes.

In terminals, our Unicorn assembly line has a 15-day JIT cycle. It is

shooting for three days. Also, by using a "focused factory concept," Unicorn uses very little production space—from seven to 10 times less than comparable terminals.

Some Tek electronic-component plants have cut cycle time from nearly four weeks to under two days. One of the first to make the change was our high-volume CRT line, where cycles have gone from eight weeks three years ago to *three days*.

Shorter cycle time offers another important benefit, Fred notes—shorter feedback loops. You don't have to wait very long before any problems show up.

Suppose you get 5 percent better with each cycle, he says, just making up the number. If you have a four-month cycle, your improvement is 1.2 percent per month. If you have a two-week cycle, the improvement is nearly 12 percent per month. The shorter the cycle, the faster you improve.

Our emphasis now is on making processes work, so things are built right the first time. The old build/test/rework mentality is vanishing.

### ***MRP is Up and Walking***

Our new manufacturing resources planning (MRP) program is now in place—pretty much, anyway. At least, all old systems will be shut off by mid-year; so MRP will be on its own.

The program took longer to set up than we'd expected. It is costly. It gobbles computer and staff time. And its guiding software has drawn mixed reviews.

But the strict set of disciplines it demands were a much-needed remedy.

And the MRP report card is mostly positive; for starters, five A's. Five plants have met the stringent test for national class A certification. In the whole country, fewer than 100 plants have been thus certified.

Interestingly, all our class A operations are components plants. Only a short two years ago, component shortages were threatening to clamp off our product output. An excellent turnaround.



This year, inventory turnover improved, company-wide, by 18 percent. Turnover measures how long the products gather dust and cost money.

There are other good marks on the MRP report card. (You're supposed to admire the current figures, not dwell on the old ones:)

Inventory record accuracy is now 90 to 98 percent; three years ago it was 60 to 90 percent. Bill-of-materials accuracy stands at 95 to 99 percent; three years ago it was 50 to 75 percent. (There were about 3000 parts shortages at any given time then; now, there are only 300 to 400—and they get solved fast.)

### ***Buying More, Making Less***

You'd have trouble finding a company as vertically integrated as we have become. There were good reasons, especially at first. Often we required components no one else could make to fit our needs. Our product excellence must credit, in part, Tek-made components.

But the world has moved right along. Many of these parts and pieces have become available elsewhere. However, rather than disband competent work teams—or perhaps leery of chancing outside suppliers—we continued the activities.

Recession in the early '80s chastened us. It brought our first layoffs—and the awareness that we might not be doing anyone a favor with so much home-made production. Companies using outside component suppliers had a pad against layoffs that began to look pretty attractive. And, on sober second thought, we realized we might not even be best at making everything.

Our new policy in the electrical and mechanical components area is to divest ourselves of manufacturing all commonly available parts. We intend to produce only things that give Tek a competitive advantage.

As this downsizing goes on, we have committed ourselves to retrain any displaced employees for other work within Tek.

As we've shifted toward "buy" in make-or-buy decisions, we've

made sure we start with good materials. One way is to have fewer but better suppliers.

Under this survival-of-fittest approach, this year 90 percent of our money for purchased components is going to 36 suppliers. That percentage was shared by about 100 suppliers a year ago.

To become Tek-accredited, vendors (in return for becoming exclusive or large suppliers) promise to work toward 100 percent quality, on-time deliveries. They also must have a procedure for isolating and solving any problem we have with their products—so it will not recur.

The program is working. In one recent sampled group of 15,000 lots, only *four* showed a problem that had happened before.

A specific benefit this year: In a time when many companies were finding semiconductors very hard to get, Tek came through it with only spot shortages.

We are getting out of the warehouse business. Where we can, we move to stockless purchasing. Rather than tag and store office, plumbing, electrical and janitorial supplies, for instance, we deal instead with contract suppliers. They make the rounds frequently, see what we need, then promptly deliver. One leased building that was brim-full of packaging materials is no longer needed. Since June 1981, we've emptied 196,000 square feet of leased warehousing—for an annual savings to Tek of \$700,000.

### ***The Evolving Organization***

Several changes in Tektronix management took place. They make a bit more complex story than usual.

In March, two new executive vice-presidents were named, to be jointly responsible for all Tektronix operating units.

One was Wim Velsink, group vice-president, Instruments and Technology, since 1982. Wim, who began with Tek as an engineer in 1960, progressed through increasing responsibilities in product and tech-

nological areas. He became director of Tektronix Labs in 1973, and vice-president of the Technology Group in 1980.

The other was Group Vice-president Larry Sutter. Larry has since left Tek to become president and chief executive officer of another local company. For the time being, all managers who reported to him will report to President Earl Wantland.

Two senior vice-presidents were named: Larry Choruby, vice-president and chief financial officer; and John Landis, vice-president and general manager of International Operations.

Two vice-presidents were added: Allan Leedy, general counsel; and Kevin Considine, director of Applied Research.

On July 27, Executive Vice President Bill Walker left us to become President and CEO of another company in the Portland area. Bill remains a director of Tek and a member of our Technology Council. Most recently, Bill was Tek's Chief Technology Officer; his career with the company spanned 26 years.

John Gray, a Tektronix director since 1973, was elected chairman of the board in January.

John is one of Oregon's most highly respected business leaders. He was chairman of the board of Omark Industries, Portland, from 1961 through 1983. He is now its vice-chairman.

John was born in Ontario, Oregon, and graduated from Oregon State University. He holds an MBA from Harvard.

John has led a great many business, educational and civic organizations. He is a director of Omark Industries; Castle & Cooke, Inc.; First Interstate Bank of Oregon, and Precision Castparts; and served as chairman of Reed College board of trustees from 1968 through 1982.

He is known for expert leadership ability. Among his goals as chairman, he includes imparting "a sense



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***T***he 2465 Portable Oscilloscope (top right), thanks to careful design planning, was the first in the industry to boast a three year warranty. It was conceived for highly automated production, improvements in size, performance and reliability. The cathode ray tube comes from a highly auto-



ated CRT manufacturing process (left), where the funnel is formed from powder pressed together at 15,000 pounds per square inch. The 2465 has eleven customized hybrid circuits (lower right) replacing thousands of discrete parts, making the instrument lighter, more reliable, and easier to build. We weren't the only ones impressed with the 2465: It won Electronic Products magazine's most recent Product of the Year Award.

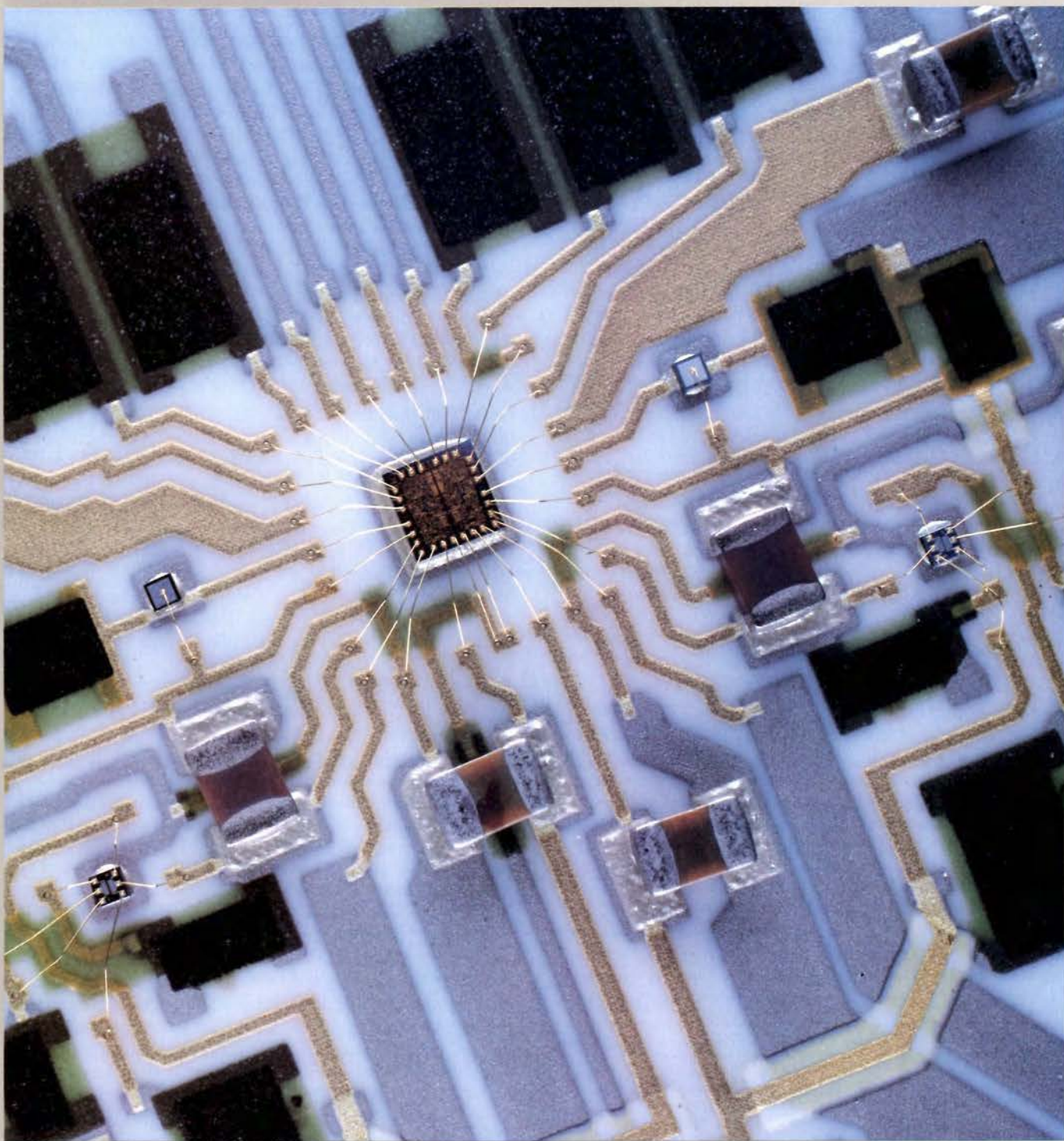
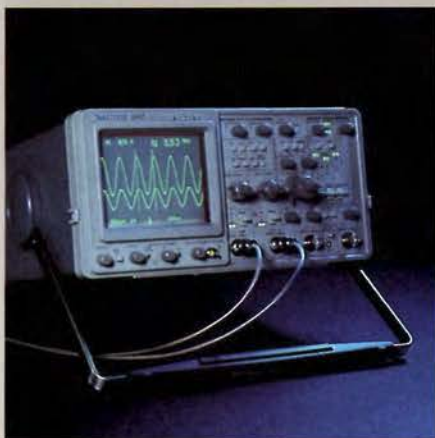
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of urgency" to Tektronix operations.

Tek founder Howard Vollum, our long-time board chairman, has stepped down (more likely, sideways) and is now vice-chairman. Tektronix will thus retain his balanced perspective and unique and penetrating insights.

In announcing the change, Howard praised the character and abilities of John, a close friend for years. The new leadership, he believes, will result in better board organization. His own role, in his own words: Senior-citizen watchdog.







## Tektronix Management Review

Tektronix experienced significant growth in the demand for its products during the past fiscal year. Products introduced in the last two years enjoyed particular success, and a more favorable economic climate in the United States contributed to increased levels of business activity. Markets in the United States grew at substantially higher rates than overseas markets generally. Weakness in foreign currency exchange rates against the dollar and lagging economic growth in Western Europe and Japan contributed substantially to the relatively lower growth outside the United States.

Since its founding in 1946, the company has played a significant role as a supplier of products contributing to the advancement of science and technology. Management views the principal focus for the future of the company as that of a broad-based supplier of products in this field, and believes Tektronix' future strength will continue to depend to a large extent on the successful development and introduction of innovative new products.

The comparison of financial results for 1983 and 1984 to those of prior years is affected by the adoption by the company in 1983 of Financial Accounting Standard No. 52 to account for the effects of foreign currencies. The financial information for prior years has not been restated to reflect this method. See Notes to Financial Statements—Accounting Policies and Shareowners' Equity.

**Financial Condition**—Management believes that Tektronix' financial condition positions the company well for the future, with substantial internal cash flows as well as the capability to seek additional funds from outside sources.

Tektronix' working capital at May 26, 1984 was 39.2 percent of net sales in fiscal 1984 and has varied between that level and 32.5 percent of net sales for the past three years. A substantial portion of current assets is represented by short-term investments overseas. The accounts receivable total, as a percentage of net sales, was 19.3 percent in 1982, 17.7 percent in 1983 and 21.0 percent in 1984; inventories were 24.3 percent of net sales in 1982, 24.6 percent in 1983 and 19.4 percent in 1984. Current liabilities were 19.5 percent of net sales in 1982, 16.6 percent in 1983 and 16.3 percent in 1984.

Total assets have increased as a result of substantial capital investments in technically advanced buildings and equipment. Expenditures in these categories in 1982 and 1983 were \$102.4 million and \$93.3 million, respectively. In 1984, the amount expended was \$95.1 million. Management expects that capital spending will

continue at comparable levels in 1985 and 1986. The cost to complete facilities projects authorized at year-end 1984 is estimated to be \$56 million.

The company's expanding asset base has been financed largely by funds generated from operations: \$144.7 million in 1982, \$141.9 million in 1983, and \$161.7 million in 1984. These internal funds have been supplemented with external borrowings and the sale of shares to employees. Management anticipates that funding needed to fulfill the company's capital commitments will be provided from these same sources and from other sources as appropriate. The company currently maintains \$115 million in long-term bank lending commitments and had \$86 million of unused short-term credit lines at fiscal year-end.

Short-term borrowings and maturing long-term debt increased \$16.2 million in 1982, but decreased by \$32.7 million in 1983, when the company's \$35 million principal amount of eight-year notes matured. Short-term debt decreased further by \$5.2 million, to \$28.5 million, in 1984. Long-term debt was down \$14.1 million in 1982, and then increased in 1983 and 1984 by \$20.3 million and \$17.3 million, respectively. The ratio of total debt to invested capital has declined from 23.9 percent in 1982 to 20.4 percent in 1984.

Shareowners' equity was reduced by charges of \$12.4 million and \$3.6 million in 1983 and 1984, respectively, resulting from the company's adoption of Financial Accounting Standard No. 52.

**Results of Operations**—Net sales increased by 11.7 percent in fiscal year 1984, having suffered a slight decline in the prior year. Customer orders increased 26 percent in 1984 over the relatively depressed levels of 1983, and unfilled orders at the end of the year were up 34 percent, to \$338 million. Management attributes these favorable changes primarily to an improved economic environment in the United States, and strong demand for certain of the company's newer products.

Manufacturing cost of sales declined in the most recent year under review as a percentage of net sales. Cost of sales was 49.8 percent of net sales in 1982, 51.7 percent in 1983, and 50.5 percent in 1984. Charges to reserves for obsolete and excess inventory contributed to the relatively high levels of cost of sales in both 1983 and 1984. Under-utilized manufacturing facilities, owing to the lower than anticipated demand, and increased indirect labor costs contributed to the manufacturing cost increases in 1983. Higher business volume afforded some improvement in gross margins in the most recent year.

1980	1981	1982	1983	1984	(in thousands)
\$347,086	\$359,264	\$ 388,714	\$ 442,252	\$ 521,537	Working capital
841,693	953,753	1,042,287	1,087,414	1,207,458	Total assets
45,809	50,175	66,334	33,675	28,500	Short-term debt
136,196	146,143	132,060	152,342	169,618	Long-term debt
483,338	557,544	630,449	661,695	771,335	Shareowners' equity



1980	1981	1982	1983	1984	(in thousands, except per share)
\$971,306	\$1,061,834	\$1,195,748	\$1,191,380	\$1,331,309	Net sales
147,849	138,036	146,447	114,455	136,688	Operating income
85,072	80,167	79,453	48,714	117,970	Earnings
4.66	4.34	4.25	2.57	6.15	Earnings per share
.79	.90	.98	1.00	1.00	Dividends per share

The company has continued its program of investment in facilities and improved manufacturing systems. As a result, depreciation expense, based on accelerated methods, has grown from 3.1 percent of net sales in 1980 to 5.6 percent in 1984. This increased charge affects both cost of sales and operating expenses.

Operating expenses have increased moderately as a percentage of sales over the last three years, ranging from 38.0 percent to 39.3 percent. Engineering expenses have increased as a percentage of net sales in each of the years under review. Engineering consumed 11.2 percent of net sales in 1984, compared with 10.5 percent in 1983 and 9.1 percent in 1982. These increases in engineering expense as a percentage of net sales reflect the company's continuing activities in developing new products and technologies. Selling expenses went from 15.1 percent of net sales in 1981 to 15.6 percent in 1983 and 14.7 percent in 1984.

Administrative expenses were 9.1 percent of net sales in 1982, 10.1 percent in 1983, and 9.9 percent in 1984. Profit sharing expense represented 3.4 percent of net sales in 1984, compared with 4.6 percent in 1982 and 2.5 percent in 1983. Included in this expense category are accruals for stock appreciation rights, which added \$3.4 million of expense in 1983. Negative accruals for stock appreciation rights reduced profit sharing expense by \$1.2 million in 1984.

Interest expense decreased by 1.2 percent in 1984 because of lower rates and reduced borrowings. Non-operating expense in 1983 of \$25.5 million represented a substantial negative change from non-operating income of \$9.5 million in 1982. The primary factor influencing non-operating income and expense in 1983 was a non-recurring \$30.5 million charge against earnings representing the actuarial cost of the company's early

retirement opportunity program, recognized when the program was adopted.

Non-operating income for the 1984 year was \$746,000 and was adversely affected by a nonrecurring \$5,000,000 charge related to the company's settlement of certain claims asserted by the U.S. General Services Administration.

Income tax expense accruals were negative for 1984, primarily as a consequence of the effect of the Deficit Reduction Act of 1984 on deferred DISC tax liability. Enactment of the Act resulted in a reversal of the company's \$32.8 million liability for deferred DISC income taxes. Aside from the DISC impact, income tax accruals for 1984 remained relatively low, principally as a result of the proportion of income earned in foreign countries with relatively low effective tax rates, and of U.S. tax credits. See Notes to Financial Statements—Income Taxes.

Earnings increased for 1984 by 142.2 percent, to \$117,970,000, following a decline of 38.7 percent in 1983. The 1984 increase reflects higher net sales, improved gross margins, the resulting increase in operating income, and the impact of the negative tax accrual resulting principally from the change in the U.S. tax law discussed above. Non-recurring items in non-operating income and expense also had a favorable effect overall on the comparison of 1984 net income with 1983 net income.

Inflation had a reduced impact on the company's operations and financial results in 1983 and 1984 compared to previous years. Price increases did not contribute significantly to the increase in net sales for 1984 over the prior year, and the effects of inflation on labor and materials costs were much reduced from prior years. The accounting view of inflation is set forth in the Notes to Financial Statements.

## Auditors' Opinion

To the Shareowners of Tektronix, Inc.:

We have examined the statements of consolidated financial position of Tektronix, Inc. and subsidiaries as of May 26, 1984, May 28, 1983, May 29, 1982, May 30, 1981, and May 31, 1980, and the related statements of consolidated income and reinvested earnings and of consolidated changes in financial position for the years then ended. Our examinations were 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.

In our opinion, such financial statements present fairly the financial position of the companies at May 26,

1984, May 28, 1983, May 29, 1982, May 30, 1981, and May 31, 1980, 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 consistently applied during the period except for the change, with which we concur, in 1983 in the method of accounting for the effects of foreign currencies as described in the notes to the financial statements.

*Deloitte Haskins & Sells*

Portland, Oregon  
July 18, 1984



## **Tektronix Consolidated Financial Position** in thousands

1980	1981	1982	1983	1984	
\$540,917	\$573,791	\$621,981	\$639,680	\$738,342	<b>Current Assets</b> are cash and assets that should be converted to cash or used in operations within one year
57,145	47,862	73,331	96,867	164,297	Cash and Investments — bank deposits and short-term investments
198,069	204,952	230,573	210,843	279,620	Accounts Receivable — due from customers after an allowance for doubtful accounts
263,563	293,705	290,268	292,885	258,513	Inventories — materials, accumulated manufacturing costs and finished products awaiting sale
22,140	27,272	27,809	39,085	35,912	Prepaid Expenses — supplies and services that have not been used, and deposits that will be refunded
193,831	214,527	233,267	197,428	216,805	<b>Current Liabilities</b> are obligations that are to be paid within one year
45,809	50,175	66,334	33,675	28,500	Short-Term Debt — borrowed for less than one year and that portion of long-term debt payable within a year
49,034	60,405	63,856	78,569	92,549	Accounts Payable — owed for materials, services, interest and miscellaneous taxes
27,404	28,788	23,118	15,280	11,046	Income Taxes Payable — to United States and foreign governments
71,584	75,159	79,959	69,904	84,710	Accrued Compensation — payable to employees, and their retirement and incentive plans
347,086	359,264	388,714	442,252	521,537	<b>Working Capital</b> is the current assets in excess of the current liabilities
276,771	340,912	379,122	397,290	407,760	Facilities — the cost of land, buildings and equipment after deducting accumulated depreciation
24,005	39,050	41,184	50,444	61,356	Other Assets — the equity in joint ventures, receivables not due within a year, and intangibles
136,196	146,143	132,060	152,342	169,618	Long-Term Debt — funds borrowed for more than a year, less that portion due within a year
23,974	30,765	41,124	43,691	21,048	Deferred Tax Liability — income taxes which have not become payable
4,354	4,774	5,387	32,258	28,652	Other Liabilities — incentive compensation and early retirement expense payable in future years
483,338	557,544	630,449	661,695	771,335	<b>Shareowners' Equity</b> is the "net worth" of the company owned by the shareowners
41,844	52,515	64,277	78,097	92,484	Share Capital — the proceeds of common shares sold less the cost of any shares repurchased
441,494	505,029	566,172	595,957	694,766	Reinvested Earnings — accumulated earnings that have been reinvested in the business
			(12,359)	(15,915)	Currency Adjustment — accumulated translation adjustment of foreign subsidiary financial statements
18,372	18,574	18,807	19,059	19,276	Common Shares — the number of shares outstanding at year-end

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



## *Tektronix Consolidated Income and Reinvested Earnings* in thousands

1980	1981	1982	1983	1984	
\$971,306	\$1,061,834	\$1,195,748	\$1,191,380	\$1,331,309	Net Sales and rentals to customers for products, replacement components and services
458,464	513,145	595,340	615,941	672,053	Cost of Sales — the materials, labor and facilities involved in manufacturing goods and providing services
512,842	548,689	600,408	575,439	659,256	Gross Income remaining from sales revenue after production costs
77,797	91,147	109,086	125,393	149,713	Engineering Expense — for research and the development of products and components
135,405	157,105	180,631	185,355	195,733	Selling Expense — for marketing and sales programs, and the distribution system
88,343	100,715	108,977	120,920	131,724	Administrative Expense — for general management and supporting services
63,448	61,686	55,267	29,316	45,398	Profit Sharing — the incentive portion of employee compensation
147,849	138,036	146,447	114,455	136,688	Operating Income remaining from sales revenue after the costs and expenses of operations
15,956	25,274	29,537	25,832	25,514	Interest Expense — the cost of borrowed funds and banking services
5,029	19,630	9,493	(25,509)	746	Non-operating Income — investment income, joint venture earnings, and other income and expense
136,922	132,392	126,403	63,114	111,920	Income Before Taxes remaining from sales revenue after operating costs and expenses and non-operating items
51,850	52,225	46,950	14,400	(6,050)	Income Taxes — provided for income related taxes levied by United States and foreign governments
85,072	80,167	79,453	48,714	117,970	Earnings remaining from sales revenue for reinvestment in the business and for dividends
370,850	441,494	505,029	566,172	595,957	Reinvested Earnings — from prior years
(14,428)	(16,632)	(18,310)	(18,929)	(19,161)	Dividends — declared for payment to the shareholders
441,494	505,029	566,172	595,957	694,766	Reinvested Earnings at year-end
\$4.66	\$4.34	\$4.25	\$2.57	\$6.15	Earnings Per Share — the earnings allocated to each of the weighted average common shares outstanding
.79	.90	.98	1.00	1.00	Dividends Per Share — received by the shareowners
18,264	18,482	18,691	18,937	19,167	Average Shares — weighted for the number of common shares outstanding during the year

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



## ***Tektronix Consolidated Changes in Financial Position*** in thousands

1980	1981	1982	1983	1984	
<b>\$117,472</b>	<b>\$121,934</b>	<b>\$144,690</b>	<b>\$141,886</b>	<b>\$161,706</b>	<b>Funds From Operations</b>
85,072	80,167	79,453	48,714	117,970	Earnings
30,303	42,228	56,473	66,710	74,537	Depreciation Expense
(2,727)	(7,252)	(1,595)	(2,423)	(3,684)	Joint Venture Earnings—Net
4,824	6,791	10,359	2,567	(22,643)	Deferred Income Taxes
			26,318	(4,474)	Unfunded Early Retirement
<b>103,658</b>	<b>27,230</b>	<b>15,556</b>	<b>5,671</b>	<b>26,488</b>	<b>Net Funds From Financing</b>
16,812	4,366	16,159	(30,635)	(5,175)	Short-term Debt
(652)	(20,717)	(35,694)	(2,961)	(2,174)	Long-term Debt Due Within Year
77,604	32,910	23,329	25,447	19,450	Long-term Debt Additions
9,894	10,671	11,762	13,820	14,387	Share Capital
<b>(191,345)</b>	<b>(141,815)</b>	<b>(116,467)</b>	<b>(105,092)</b>	<b>(101,603)</b>	<b>Other Changes in Financial Position</b>
(44,501)	(6,883)	(25,621)	19,730	(68,777)	Accounts Receivable
(49,030)	(30,142)	3,437	(2,617)	34,372	Inventories
(3,242)	(5,132)	(537)	(11,276)	3,173	Prepaid Expenses
7,001	11,371	3,451	14,713	13,980	Accounts Payable
6,960	1,384	(5,670)	(7,838)	(4,234)	Income Taxes Payable
9,923	3,575	4,800	(10,055)	14,806	Accrued Compensation
(115,926)	(114,065)	(102,410)	(93,325)	(95,125)	Facilities Expenditures
(2,530)	(1,923)	6,083	(2,065)	3,758	Other Assets and Liabilities
			(12,359)	(3,556)	Currency Adjustment
<b>(14,428)</b>	<b>(16,632)</b>	<b>(18,310)</b>	<b>(18,929)</b>	<b>(19,161)</b>	<b>Dividends</b>
<b>15,357</b>	<b>(9,283)</b>	<b>25,469</b>	<b>23,536</b>	<b>67,430</b>	<b>Changes in Cash and Investments</b>

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



# Tektronix Consolidated Notes to Financial Statements

## ACCOUNTING POLICIES

**Principles of Consolidation**—The consolidated financial statements include the accounts of Tektronix, Inc. and its wholly owned subsidiaries (the company) since dates of organization or acquisition. All material intercompany transactions and balances have been eliminated.

**Joint Venture Companies**—Investments in joint venture companies, where the company holds fifty percent or less of the share capital, are stated at cost plus the company's equity in their reinvested earnings. All material intercompany income has been eliminated.

**Foreign Currencies**—Prior to 1983 foreign affiliate monetary assets and liabilities were translated into United States dollars at the period-end rate of exchange, while other assets and liabilities were carried at their historic values. Income was translated at average exchange rates. Translation gains and losses were included in non-operating income. Foreign manufacturing operations, and sales operations in highly inflationary economies, continue to use this translation method. Beginning in 1983 most foreign sales operations financial statements are translated into United States dollars at current rates of exchange with changes in exchange rates reflected in the currency adjustment to shareholders' equity. Transaction gains and losses are included in non-operating income.

**Inventories**—United States inventories are stated at the lower of cost or market, with cost determined on the last-in, first-out basis (LIFO). Foreign inventories are stated at the lower of cost or market on the first-in, first-out basis (FIFO).

**Facilities and Depreciation**—Facilities are stated at their original cost when acquired. Depreciation for financial accounting purposes is generally provided by accelerated methods over the estimated useful lives of the facilities ranging from 10 to 48 years for buildings and 3 to 15 years for equipment. Leasehold improvements are amortized on a straight-line basis over the estimated useful life or the lease term, whichever is less. Depreciation and amortization for tax reporting is provided over the shortest allowable lives.

**Engineering Expense**—Expenditures for research, development and engineering of products and manufacturing processes are expensed as incurred.

**Pension Expense**—Pensions are funded as accrued, including amortization of past service cost by the declining balance method over 20 years.

**Income Taxes**—Investment tax credits reduce income taxes in the year the related facility is placed in service. Prior to 1984 tax deferral resulting from Domestic International Sales Corporation (DISC) subsidiaries was recognized in the provision for income taxes and included in the deferred tax liability. Taxation of DISC related earnings was repealed and in 1984 the company reversed this deferred tax liability.

**Per Share Amounts**—The earnings per share are based on the weighted average number of shares outstanding during the fiscal year.

**Fiscal Year**—The company's fiscal year is the 52 or 53 weeks ending the last Saturday in May. The 52 week years are comprised of 13 four-week accounting periods separated into two 12-week quarters ending during August and November, a 16 week quarter ending during March, and a 12-week quarter ending during May. A 53 week year results in a five-week accounting period and a 13-week quarter at the beginning of the fiscal year. 1980 was a 53 week fiscal year.

**Rounding**—All financial amounts, except per share, are rounded to the nearest one thousand dollars in the financial statements and tables to the notes.



# Tektronix Consolidated Notes to Financial Statements continued

## BUSINESS SEGMENTS

The company and its joint venture affiliates operate predominantly in a single industry segment: The design, manufacture, sale and service of electronic measurement, display and control instruments and systems used

in science, industry and education.

Geographically the company operates primarily in the industrialized world. Sales, income and assets in the United States, Europe and other geographic areas were:

1980	1981	1982	1983	1984	
\$591,760	\$ 625,335	\$ 729,369	\$ 734,223	\$ 861,295	U.S. sales to customers
57,805	71,714	89,212	89,941	97,663	U.S. export sales to customers
185,772	219,976	237,339	228,393	218,628	U.S. transfers to affiliates
835,337	917,025	1,055,920	1,052,557	1,177,586	U.S. sales
288,630	322,900	328,469	324,273	327,420	European sales to customers
577	2,665	25,756	18,650	46,754	European transfers to affiliates
289,207	325,565	354,225	342,923	374,174	European sales
33,111	41,885	48,699	42,943	44,931	Other area sales to customers
(186,349)	(222,641)	(263,096)	(247,043)	(265,382)	Inter-area eliminations
\$971,306	\$1,061,834	\$1,195,748	\$1,191,380	\$1,331,309	Net sales
\$123,170	\$ 118,688	\$ 121,547	\$ 85,151	\$ 82,840	U.S. operating income
34,002	30,132	31,363	36,233	56,426	European operating income
2,139	3,768	4,186	3,829	3,986	Other area operating income
(5,529)	(8,412)	(2,937)	(1,461)	5,025	Inter-area eliminations
153,782	144,176	154,159	123,752	148,277	Area operating income
(5,933)	(6,140)	(7,712)	(9,297)	(11,589)	General corporate expense
(15,956)	(25,274)	(29,537)	(25,832)	(25,514)	Interest expense
5,029	19,630	9,493	(25,509)	746	Non-operating income
\$136,922	\$ 132,392	\$ 126,403	\$ 63,114	\$ 111,920	Income before taxes
\$607,686	\$ 680,138	\$ 748,140	\$ 783,598	\$ 813,110	U.S. assets
156,444	198,702	192,785	184,137	192,133	European assets
13,203	16,383	18,042	14,664	18,600	Other area assets
(11,027)	(14,395)	(15,992)	(16,630)	(13,861)	Inter-area eliminations
766,306	880,828	942,975	965,769	1,009,982	Area assets
19,759	27,011	29,377	31,585	41,141	Joint venture equity
55,628	45,914	69,935	90,060	156,335	Corporate cash and investments
\$841,693	\$ 953,753	\$1,042,287	\$1,087,414	\$1,207,458	Assets at year-end

Transfers of products and services are made at arms-length prices between geographic areas. The profit on transfers between geographic areas is not recognized by the manufacturer until sales are made to unaffiliated customers. Area operating income includes all directly incurred and allocable costs, except identified corporate expenses. Identifiable assets are those

which are specifically associated with the operations of each geographic area.

Net sales to United States or foreign government agencies were not more than ten percent of consolidated net sales in any of the past five years, and no other customer accounted for more than four percent of sales.

## FOREIGN AFFILIATES

The company has 19 foreign operating subsidiaries located in Australia, Austria, Belgium, Brazil, Canada, Denmark, Finland, France, Germany, Guernsey, Italy, The Netherlands, Norway, Spain, Sweden, Switzerland,

and the United Kingdom with a branch in Ireland. The assets, liabilities, sales and income of foreign subsidiaries are included in the consolidated financial statements in these amounts:



## Tektronix Consolidated Notes to Financial Statements *continued*

1980	1981	1982	1983	1984	
\$169,051	\$208,864	\$218,375	\$233,030	\$315,053	Current assets
55,483	68,207	68,548	69,334	77,964	Current liabilities
22,185	28,938	34,787	29,727	34,511	Facilities less depreciation
907	410	603	95	257	Other assets
7,857	8,228	9,449	7,598	26,211	Other liabilities
\$321,741	\$364,785	\$377,167	\$367,215	\$372,351	Net sales
97,367	105,403	109,479	106,268	137,951	Gross income
37,446	34,285	30,808	34,760	61,781	Operating income
39,781	33,301	31,948	34,916	65,005	Income before taxes
29,882	19,401	21,048	21,787	47,515	Earnings

The company has investments in joint venture companies in Japan and Mexico, and until 1984 in Austria.

The company's share of the assets, liabilities, sales and income of these unconsolidated affiliates consisted of:

1980	1981	1982	1983	1984	
\$ 24,873	\$ 32,173	\$ 33,429	\$ 31,166	\$ 36,506	Current assets
12,903	16,892	16,166	15,149	14,224	Current liabilities
5,477	8,686	9,114	13,023	13,303	Facilities less depreciation
3,063	4,236	3,895	4,213	3,428	Other assets
1,558	1,417	1,237	1,560	1,868	Other liabilities
\$ 46,064	\$ 59,660	\$ 61,520	\$ 57,368	\$ 57,078	Net sales
16,107	23,728	21,613	18,668	20,539	Gross income
8,859	14,181	11,161	7,761	10,327	Operating income
8,041	15,575	10,419	7,966	10,939	Income before taxes
2,930	7,597	4,023	3,636	4,785	Earnings

The company had arms-length sales to, purchases from, and accounts receivable due from joint venture companies amounting to:

1980	1981	1982	1983	1984	
\$ 44,764	\$ 54,130	\$ 59,244	\$ 56,136	\$ 50,991	Sales to
8,628	10,954	10,665	9,288	12,509	Purchases from
8,487	10,143	11,803	9,840	10,128	Accounts receivable

There are no significant restrictions which prevent dividends to the parent company from subsidiary or joint venture companies.

### ACCOUNTS RECEIVABLE

The accounts receivable have been reduced by an allowance for doubtful accounts which was \$2,022,000 in 1980, \$2,177,000 in 1981, \$2,186,000 in 1982, \$2,092,000

in 1983, and \$2,698,000 in 1984. The net charges to this reserve for uncollected credit sales were not material.

### INVENTORIES

The inventories valued on a first-in, first-out basis (FIFO) approximate current cost. Inventories, less a

reserve adjusting these inventories to the last-in, first-out basis (LIFO), consisted of:

1980	1981	1982	1983	1984	
\$ 62,197	\$ 57,698	\$ 42,895	\$ 49,290	\$ 56,423	Purchased materials
169,706	196,925	220,735	229,747	210,000	Work-in-process
81,388	115,181	130,221	126,470	99,663	Finished goods
313,291	369,804	393,851	405,507	366,086	Inventories at FIFO
(49,728)	(76,099)	(103,583)	(112,622)	(107,573)	LIFO reserve
\$263,563	\$293,705	\$290,268	\$292,885	\$258,513	Inventories
85%	83%	89%	89%	89%	Inventories valued at LIFO



## **Tektronix Consolidated Notes to Financial Statements** continued

### **FACILITIES AND DEPRECIATION**

The original cost of facilities, additions and disposals consisted of:

1980	1981	1982	1983	1984	
\$ 8,240	\$ 15,524	\$ 27,656	\$ 28,251	\$ 29,567	Land at prior year-end
7,360	12,668	1,200	1,698	2,097	Additions
(76)	(536)	(605)	(382)	(234)	Dispositions
<u>15,524</u>	<u>27,656</u>	<u>28,251</u>	<u>29,567</u>	<u>31,430</u>	Land at year-end
102,976	163,598	195,132	211,945	228,289	Buildings at prior year-end
61,057	34,935	17,790	20,195	2,448	Additions
(435)	(3,401)	(977)	(3,851)	(2,765)	Dispositions
<u>163,598</u>	<u>195,132</u>	<u>211,945</u>	<u>228,289</u>	<u>227,972</u>	Buildings at year-end
142,257	193,514	254,126	322,282	391,795	Equipment at prior year-end
59,342	69,119	82,194	82,828	83,653	Additions
(8,085)	(8,507)	(14,038)	(13,315)	(32,648)	Dispositions
<u>193,514</u>	<u>254,126</u>	<u>322,282</u>	<u>391,795</u>	<u>442,800</u>	Equipment at year-end
41,958	30,125	27,468	28,694	17,298	Construction at prior year-end
(11,833)	(2,657)	1,226	(11,396)	6,927	Net changes
<u>30,125</u>	<u>27,468</u>	<u>28,694</u>	<u>17,298</u>	<u>24,225</u>	Construction at year-end
<u>\$402,761</u>	<u>\$504,382</u>	<u>\$591,172</u>	<u>\$666,949</u>	<u>\$726,427</u>	Facilities

The accumulated depreciation, depreciation expense and depreciation related to disposals consisted of:

1980	1981	1982	1983	1984	
\$ 32,331	\$ 37,462	\$ 44,736	\$ 53,769	\$ 62,546	For buildings at prior year-end
5,346	7,535	9,317	9,915	9,901	Depreciation expense
(215)	(261)	(284)	(1,138)	(1,603)	Depreciation related to dispositions
<u>37,462</u>	<u>44,736</u>	<u>53,769</u>	<u>62,546</u>	<u>70,844</u>	For buildings at year-end
68,646	88,528	118,734	158,281	207,113	For equipment at prior year-end
24,957	34,693	47,156	56,795	64,636	Depreciation expense
(5,075)	(4,487)	(7,609)	(7,963)	(23,926)	Depreciation related to dispositions
<u>88,528</u>	<u>118,734</u>	<u>158,281</u>	<u>207,113</u>	<u>247,823</u>	For equipment at year-end
<u>\$125,990</u>	<u>\$163,470</u>	<u>\$212,050</u>	<u>\$269,659</u>	<u>\$318,667</u>	Accumulated depreciation

### **OTHER ASSETS**

The other long-term assets consisted of:

1980	1981	1982	1983	1984	
\$19,759	\$27,011	\$29,377	\$31,585	\$41,141	Investments in joint-venture companies
1,661	1,993	3,506	2,498	2,410	Long-term contracts receivable
			10,008	8,983	Deferred profit sharing
<u>2,585</u>	<u>10,046</u>	<u>8,301</u>	<u>6,353</u>	<u>8,822</u>	Goodwill and other intangibles
<u>\$24,005</u>	<u>\$39,050</u>	<u>\$41,184</u>	<u>\$50,444</u>	<u>\$61,356</u>	Other assets

### **SHORT-TERM DEBT**

The company has lines of credit with United States and foreign banks which aggregated \$115 million at May 26, 1984, of which approximately \$86 million was unused.

The charges are not significant for those lines that are fee compensated.



## Tektronix Consolidated Notes to Financial Statements continued

A summary of short-term borrowings was:

1980	1981	1982	1983	1984	
\$17,457	\$29,458	\$30,640	\$30,714	\$26,326	Bank borrowings at year-end:
16.2%	17.1%	16.0%	13.9%	13.5%	Outstanding
					Average interest rate
\$17,541	\$23,144	\$29,855	\$30,080	\$25,840	At accounting period-end:
13.0%	15.7%	15.5%	15.1%	13.6%	Average outstanding
\$24,981	\$31,224	\$45,312	\$38,320	\$31,605	Average interest rate
					Maximum outstanding
\$27,700					Commercial paper borrowings at year-end:
11.4%					Outstanding
					Average interest rate
\$49,763					At accounting period-end:
15.2%					Average outstanding
\$83,100					Average interest rate
					Maximum outstanding

### LONG-TERM DEBT

The long-term indebtedness consisted of:

1980	1981	1982	1983	1984	
	\$ 31,000	\$ 51,900	\$ 74,500	\$ 74,500	Commercial paper borrowings
\$ 75,000	75,000	75,000	75,000	75,000	11% Notes due July 15, 1990
35,000	35,000	35,000			8 <sup>7</sup> / <sub>8</sub> % Notes due May 15, 1983
20,000	20,000				9 <sup>1</sup> / <sub>8</sub> % Note due November 15, 1981
3,875	2,720	3,193	507	18,623	Foreign currency borrowings
2,973	3,140	2,661	5,296	3,669	Other borrowings
136,848	166,860	167,754	155,303	171,792	Long-term borrowings
(652)	(20,717)	(35,694)	(2,961)	(2,174)	Current Maturities
<u>\$136,196</u>	<u>\$146,143</u>	<u>\$132,060</u>	<u>\$152,342</u>	<u>\$169,618</u>	Long-term debt

The commercial paper borrowings, with a weighted average discount rate of 10.4% at year-end, have been supported by revolving credit commitments since 1981. These commitments aggregated \$115 million at May 26, 1984, and are convertible to four-year term loans in 1985. The company intends to replace these commercial paper borrowings in the future with long-term financing.

The 11% Notes may be redeemed at any time at the option of the company on or after July 15, 1986, at the principal amount together with accrued interest.

The foreign currency borrowings are due from December 15, 1988 to April 12, 1994 and are comprised of \$8,705,000 at fixed interest rates ranging from 12.00% to 14.19%, with the remainder at floating interest rates with a weighted average rate of 11.47% at year-end.

Aggregate long-term debt and early retirement principal payments for each of the next five years will be \$6,835,000 in 1985, \$33,613,000 in 1986, \$29,066,000 in 1987, \$22,173,000 in 1988, and \$24,566,000 in 1989.

### COMMITMENTS

The company is committed under operating leases for buildings and equipment in the aggregate amount of \$41,417,000; payable \$10,989,000 in 1985, \$7,364,000 in 1986, \$4,998,000 in 1987, \$3,376,000 in 1988, \$2,812,000

in 1989, and \$11,878,000 thereafter.

The cost to complete facilities projects authorized at May 26, 1984 is approximately \$56 million.

### SHAREOWNERS' EQUITY

The company has authorized capital of 60 million no par value common shares and 1 million no par value preferred shares. None of the preferred shares have been issued.

In 1983 the company changed its method of account-

ing for the effects of foreign currencies, but did not apply this change to prior years. In adopting this method a currency adjustment of \$12,359,000 was made to shareowners' equity, of which \$4,542,000 relates to beginning of the year adjustments.



# Tektronix Consolidated Notes to Financial Statements continued

## EXPENSE SUPPLEMENT

A summary of selected expense categories is:

1980	1981	1982	1983	1984	
\$12,393	\$14,169	\$15,166	\$16,432	\$18,590	Advertising expense
31,477	36,433	38,006	38,881	38,942	Maintenance and repair expense
12,322	16,179	17,582	16,294	14,494	Rental expense

## PENSION PLANS

The parent company and a domestic subsidiary have defined benefit pension plans which are integrated with social security and cover all United States employees. The weighted average assumed rate of return used in determining the actuarial present value of accumulated

plan benefits was 7.5% through 1983, and 9.5% thereafter. The present value of accumulated plan benefits, the plan net assets available for benefits, the unfunded early retirement and pension expense were:

1980	1981	1982	1983	1984	
	\$39,577	\$48,788	\$103,961	\$ 85,920	Vested benefits
	11,864	13,725	12,875	11,530	Non-vested benefits
	<u>\$51,441</u>	<u>\$62,513</u>	<u>\$116,836</u>	<u>\$ 97,450</u>	Plan benefit value
\$42,145	\$60,205	\$78,262	\$143,011	\$150,866	Plan net assets available for benefits
			26,318	21,844	Long-term unfunded early retirement
9,406	12,172	14,857	48,248	10,598	Pension expense

Included in 1983 pension expense is \$30,500,000 providing a pension supplement for employees who accepted a one-time early retirement opportunity. The long-term unfunded portion of this expense is included in other liabilities and accrues interest at 10.75%.

Foreign subsidiaries provide for employee retirement in keeping with the practices and laws of the countries in which they operate. Foreign plans are not considered to be material and are not required to report to United

States government agencies. Foreign subsidiary pension expenses were \$2,360,000 in 1980, \$2,733,000 in 1981, \$2,900,000 in 1982, \$3,116,000 in 1983, and \$3,327,000 in 1984.

Amounts owing under pension and incentive plans, included in accrued compensation, were \$33,964,000 in 1980, \$33,870,000 in 1981, \$31,078,000 in 1982, \$24,303,000 in 1983, and \$32,455,000 in 1984.

## INCENTIVE PLANS

As a part of compensation, most employees receive cash and deferred profit share amounting to 27.5% of income of participating companies before profit sharing, incentive compensation, charitable contributions and income taxes. Additional profit share of 7.5% is contributed to a retirement trust for parent company employees.

The company has incentive compensation plans for executives. The plans provide for compensation based on financial performance over one and three-year periods. Provision for this expense is included in profit sharing.

The company has stock option plans for selected employees. At May 26, 1984, 955,096 common shares were reserved for issuance under these plans. There were 691,855 shares subject to outstanding options, of which 239,533 were exercisable. The outstanding options are held by 821 participants, are exercisable at prices from \$12.13 to \$83.60, and expire between August 29, 1984 and April 26, 1994. There is no material potential dilution to earnings per share from unexercised stock options. The options that have been exercised under these and prior plans are:

1980	1981	1982	1983	1984	
64,750	33,294	6,740	38,321	44,994	Number of shares
\$1,022	\$757	\$108	\$2,039	\$2,394	Option value

The stock option plans allow stock appreciation rights to be granted to participants. When granted, all or part of an option may be surrendered for shares or payment in an amount equal to the difference between the option

price and the market price of the option right surrendered. Provision for the difference between current market price and option price of outstanding stock appreciation rights is included in profit sharing.



## Tektronix Consolidated Notes to Financial Statements continued

Profit sharing expense consisted of:

1980	1981	1982	1983	1984	
\$50,599	\$48,166	\$45,393	\$20,631	\$35,559	Cash and deferred profit share
12,668	12,067	11,934	5,092	8,803	Retirement profit share
181	(218)		189	2,282	Incentive compensation provision
	1,671	(2,060)	3,404	(1,246)	Stock appreciation rights provision
<u>\$63,448</u>	<u>\$61,686</u>	<u>\$55,267</u>	<u>\$29,316</u>	<u>\$45,398</u>	Profit sharing

Employees of the parent company and a domestic subsidiary are eligible to participate in an Employee Share Purchase Plan in which 3,927 employees were participants, of 17,413 eligible employees, at May 26, 1984. Under the Plan 478,650 common shares of the company were reserved at May 26, 1984 and 639,556 at

May 28, 1983. During 1984, 160,906 shares with a market value of \$11,344,000 were issued for \$9,075,000, while 213,320 shares with a market value of \$11,781,000 were issued for \$9,425,000 in 1983. The share purchase discount provided in the plan has been charged to non-operating income.

### NON-OPERATING INCOME

The non-operating sources of income and expense which comprise non-operating income consisted of:

1980	1981	1982	1983	1984	
\$ 4,593	\$ 8,183	\$10,447	\$ 8,965	\$11,473	Investment income
2,930	7,597	4,023	3,636	4,785	Equity in joint venture earnings
1,729	(3,309)	(2,679)	(3,035)	(1,612)	Currency gains (losses)
	10,538		(30,500)	(5,000)	Nonrecurring income (expense)
(4,223)	(3,379)	(2,298)	(4,575)	(8,900)	Other income (expense)—net
<u>\$ 5,029</u>	<u>\$19,630</u>	<u>\$ 9,493</u>	<u>\$(25,509)</u>	<u>\$ 746</u>	Non-operating income

The nonrecurring income is the sale of the company's patient monitoring business in 1981. The nonrecurring expense is the actuarial cost of an early retirement pro-

gram in 1983, and the settlement of sales discount claims with the U.S. Government in 1984.

### INCOME TAXES

The provision for income taxes consisted of:

1980	1981	1982	1983	1984	
\$34,468	\$31,225	\$ 28,950	\$ (1,772)	\$(29,150)	United States
7,483	7,100	7,100	3,043	5,250	State
9,899	13,900	10,900	13,129	17,850	Foreign
<u>51,850</u>	<u>52,225</u>	<u>46,950</u>	<u>14,400</u>	<u>(6,050)</u>	Income taxes provided
(3,946)	(4,386)	(4,444)	(3,122)	32,800	Undistributed subsidiary earnings
		(4,667)	(4,808)	(6,127)	Depreciation timing differences
			8,721	(1,013)	Early retirement program
(878)	(2,405)	(1,248)	(3,358)	(3,017)	Other tax deferrals
(4,824)	(6,791)	(10,359)	(2,567)	22,643	Income taxes deferred
			12,250		Prepaid for inventory obsolescence
<u>\$47,026</u>	<u>\$45,434</u>	<u>\$ 36,591</u>	<u>\$24,083</u>	<u>\$ 16,593</u>	Income taxes currently payable

The above provisions were less than the amounts which would result by applying the United States statutory rate to income before income taxes. A reconciliation follows on the next page:



## Tektronix Consolidated Notes to Financial Statements continued

1980	1981	1982	1983	1984	
\$62,984	\$60,901	\$58,145	\$29,032	\$ 51,483	Income taxes based on U.S. statutory rate
				(32,800)	Reversal of DISC deferred taxes
		(3,821)	(3,618)	(5,712)	U.S. research and experimentation tax credits
(5,296)	(5,258)	(6,041)	(6,517)	(6,372)	U.S. investment tax credits
(556)	(2,204)	2,054	1,094	(1,178)	Other U.S. adjustments
4,052	3,833	3,829	1,643	2,835	State income taxes net of U.S. tax
(7,986)	(1,552)	(5,365)	(5,561)	(12,105)	Effect of foreign subsidiaries taxed below U.S. rate
(1,348)	(3,495)	(1,851)	(1,673)	(2,201)	Effect of after-tax joint venture earnings
<u>\$51,850</u>	<u>\$52,225</u>	<u>\$46,950</u>	<u>\$14,400</u>	<u>\$ (6,050)</u>	Income taxes

On July 18, 1984 the United States taxation related to Domestic International Sales Corporation (DISC) earnings was repealed, and as of May 26, 1984 the company reversed this deferred tax liability amounting to \$32,800,000 (\$1.71 per share).

Undistributed reinvested earnings of foreign subsidiaries amounted to approximately \$245 million at May 26, 1984. No provision has been made for additional United States income taxes, which could result from the transfer of undistributed reinvested earnings to the par-

ent company, because the company has no present intention of transferring these earnings.

Equity in the reinvested earnings of joint venture companies amounted to approximately \$35 million at May 26, 1984. No provision has been made for United States income taxes which could result from the transfer of such earnings because foreign tax credits would be available to offset the amount of United States income taxes otherwise payable.

### INFLATION (unaudited)

The effects of inflation are not apparent in traditional financial statements which are based on historical cost. The company has attempted to identify the financial effects of changing prices using the current cost method which is dependent upon estimates, approximations and assumptions. The current cost method measures changes in specific prices for the inventories and facilities used in the company's operations, using appropriate price indexes. The effect of general inflation on the current cost information is based on the U.S. Consumer Price Index for All Urban Consumers and is measured after translation of foreign currency financial statements.

Adjustments to the historical cost statements are necessary to restate financial information under the current cost method. Cost of sales is revised to reflect changes in inventory prices for foreign inventories which are not on the last-in, first-out (LIFO) basis. No adjustment is required for United States inventories, which are valued

on the LIFO basis, because historical cost of sales approximates current cost. Depreciation expense is adjusted to reflect increased costs to construct facilities at current prices. This revision is based on the same depreciation methods, useful lives and salvage values as used in the historical cost statements. Income taxes are not adjusted because current tax laws do not recognize the effects of inflation.

Inflation also causes gains or losses in the purchasing power of monetary items which are money or a claim to receive or pay money in an amount which is presently fixed or determinable. Since the company owes more to its creditors than it holds in cash and has due from customers, a future gain occurs as these creditors are paid with money that has declined in purchasing power as measured in inflated dollars.

This selected financial information, stated in average 1984 dollars, has been adjusted for the effects of changing prices:

1980	1981	1982	1983	1984	
<u>\$1,283,350</u>	<u>\$1,253,092</u>	<u>\$1,296,396</u>	<u>\$1,234,031</u>	<u>\$1,331,309</u>	Net sales
95,971	80,809	73,543	40,512	117,970	Earnings
					Adjustments for:
(4,053)	(3,012)	(1,610)	1,407	28	Cost of sales before depreciation
(12,381)	(10,787)	(10,988)	(11,352)	(11,377)	Depreciation expense
<u>\$ 79,537</u>	<u>\$ 67,010</u>	<u>\$ 60,945</u>	<u>\$ 30,567</u>	<u>\$ 106,621</u>	Earnings adjusted for specific prices
5.26	4.38	3.94	2.14	5.56	Earnings per share
1.04	1.07	1.07	1.04	1.00	Dividends per share
61.73	68.63	55.71	75.70	55.44	Share price at year-end
<u>\$ 774,825</u>	<u>\$ 829,395</u>	<u>\$ 901,339</u>	<u>\$ 918,790</u>	<u>\$ 991,400</u>	Shareowners' equity
			(6,885)	(1,740)	Aggregate currency adjustment
7,118	9,514	6,422	2,043	(253)	Gain from decline in purchasing power
(34,621)	(23,115)	(1,765)	(12,105)	(25,942)	Excess of the increase in general inflation over specific prices for inventories and facilities
230.0	257.5	280.3	293.4	303.9	Average consumer price index



## Tektronix Consolidated Notes to Financial Statements continued

At May 26, 1984, the current cost of inventories was \$368,950,000, and facilities was \$538,654,000. The 1984 increase in specific prices for inventories and facilities aggregated, in average 1984 dollars, \$12,349,000, which is \$25,942,000 less than the increase attributable to gen-

eral inflation. The difference results because the costs of materials and components used in the design and manufacture of the company's products have not increased as much as general price levels.

### QUARTERLY FINANCIAL SUMMARY (unaudited)

In the opinion of management, this unaudited quarterly financial summary includes all adjustments necessary to

present fairly the results for the periods represented:

12 Weeks to Aug. 21, 1982	12 Weeks to Nov. 13, 1982	16 Weeks to Mar. 5, 1983	12 Weeks to May 28, 1983	52 Weeks to May 28, 1983	
\$259,792	\$273,848	\$373,036	\$284,704	\$1,191,380	Net sales
127,933	137,581	185,229	124,696	575,439	Gross income
27,094	25,755	49,276	12,330	114,455	Operating income
19,329	22,489	15,550	5,746	63,114	Income before taxes
11,929	14,678	13,711	8,396	48,714	Earnings
.63	.78	.72	.44	2.57	Earnings per share
.25	.25	.25	.25	1.00	Dividends per share
12 Weeks to Aug. 20, 1983	12 Weeks to Nov. 12, 1983	16 Weeks to Mar. 3, 1984	12 Weeks to May 26, 1984	52 Weeks to May 26, 1984	
\$266,019	\$285,000	\$402,358	\$377,932	\$1,331,309	Net sales
134,153	139,984	197,666	187,453	659,256	Gross income
25,600	28,243	38,957	43,888	136,688	Operating Income
20,425	18,459	36,204	36,832	111,920	Income before taxes
13,480	12,724	25,684	66,082	117,970	Earnings
.71	.66	1.34	3.44	6.15	Earnings per share
.25	.25	.25	.25	1.00	Dividends per share

The consolidated effective income tax rate was reduced in the quarter ended March 5, 1983 because of an early retirement program, in the quarter ended May 28, 1983 because of inventory obsolescence which

affected Unites States taxable income, and in the quarter ended May 26, 1984 because of the reversal of DISC related deferred income taxes.

### COMMON SHARE PRICES

The company's common shares are traded on the New York and Pacific Stock Exchanges. There were 6,181 shareowners of record at August 1, 1984. The market

price range and close are the composite prices reported by The Wall Street Journal rounded to full cents per share:

1980	1981	1982	1983	1984	
\$59.50	\$70.25	\$61.50	\$54.88	\$86.75	First fiscal quarter:
48.63	47.50	47.25	34.00	72.00	Highest trade
57.25	67.63	47.38	37.00	73.75	Lowest trade
					Closing share price
61.50	69.88	54.75	54.00	86.75	Second fiscal quarter:
53.25	59.25	45.13	36.75	70.50	Highest trade
59.00	65.50	53.00	50.75	81.50	Lowest trade
					Closing share price
64.25	68.50	56.00	75.75	81.50	Third fiscal quarter:
51.00	50.50	45.00	48.50	56.25	Highest trade
51.13	52.63	45.00	75.00	58.00	Lowest trade
					Closing share price
52.00	63.25	56.25	76.50	65.75	Fourth fiscal quarter:
41.63	51.75	42.38	61.00	55.00	Highest trade
49.75	60.75	52.63	74.00	56.50	Lowest trade
					Closing share price

### DIVIDEND POLICY

Dividends are paid at the discretion of the Board of Directors dependent upon their judgment of the com-

pany's future earnings, expenditures and financial condition.



# Tektronix Consolidated Financial Performance

1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	
18.69	30.13	33.88	40.50	49.25	49.75	60.75	52.63	74.00	56.50	Share Price at Year-End
-12.6%	61.2%	12.4%	19.5%	21.6%	1.0%	22.1%	-13.4%	40.6%	-23.6%	Market appreciation
.5%	.6%	.7%	1.4%	1.5%	1.6%	1.8%	1.6%	1.9%	1.4%	Dividend yield
13.9%	14.0%	17.5%	18.9%	21.3%	19.4%	15.5%	13.4%	7.6%	17.1%	Return on Equity
7.8%	8.2%	9.7%	9.5%	9.8%	8.8%	7.5%	6.6%	4.1%	8.9%	Earnings margin
1.78x	1.70x	1.81x	1.99x	2.17x	2.21x	2.05x	2.02x	1.85x	1.93x	Equity turnover
12.2%	12.3%	15.4%	16.7%	18.7%	15.8%	12.3%	11.0%	6.6%	14.3%	Return on Capital
8.3%	8.7%	10.0%	9.8%	10.1%	9.4%	8.5%	7.7%	5.2%	9.5%	Preinterest margin
1.47x	1.40x	1.55x	1.72x	1.85x	1.70x	1.47x	1.48x	1.39x	1.51x	Capital turnover
329,000	376,000	513,000	650,000	847,000	1,049,000	1,040,000	1,221,000	1,124,000	1,416,000	Customer Orders
10.8%	14.3%	36.4%	26.7%	30.3%	23.8%	-.9%	17.4%	-7.9%	26.0%	Increase
18.5%	18.6%	25.0%	27.5%	28.2%	30.2%	28.4%	26.3%	22.5%	23.9%	Orders unfilled at year-end
336,645	366,645	454,958	598,886	786,936	971,306	1,061,834	1,194,748	1,191,380	1,331,309	Net Sales
24.0%	8.9%	24.1%	31.6%	31.4%	23.4%	9.3%	12.6%	-.4%	11.7%	Increase
51.4%	53.8%	56.9%	55.5%	54.3%	52.8%	51.7%	50.2%	48.3%	49.5%	Gross income margin
15.1%	15.8%	16.8%	15.7%	15.4%	15.2%	13.0%	12.2%	9.6%	10.3%	Operating income margin
13.9%	15.1%	16.6%	16.0%	16.1%	14.1%	12.5%	10.6%	5.3%	8.4%	Pretax income margin
43.8%	45.5%	41.9%	40.8%	39.1%	37.9%	39.4%	37.1%	22.8%	-5.4%	Income tax rate
26,329	30,089	43,971	56,846	77,151	85,072	80,167	79,453	48,714	117,970	Earnings
23.3%	14.3%	46.1%	29.3%	35.7%	10.3%	-5.8%	-0.9%	-38.7%	142.2%	Increase
1.52	1.71	2.49	3.19	4.28	4.66	4.34	4.25	2.57	6.15	Earnings per share
.10	.12	.225	.48	.60	.79	.90	.98	1.00	1.00	Dividends per share
306,616	344,860	415,328	491,130	642,907	841,693	953,753	1,042,287	1,087,414	1,207,458	Total Assets
1.23x	1.15x	1.24x	1.36x	1.44x	1.34x	1.19x	1.20x	1.12x	1.18x	Asset turnover
5.58x	5.90x	6.18x	6.22x	6.02x	5.92x	5.55x	5.73x	5.83x	6.10x	Receivable turnover
3.22x	3.72x	4.32x	4.55x	4.19x	4.02x	3.66x	4.04x	3.91x	4.61x	Inventory turnover
4.57x	4.27x	4.98x	5.75x	5.20x	4.12x	3.51x	3.36x	3.06x	3.34x	Facility turnover
244,906	273,659	319,287	374,133	493,891	665,343	753,862	828,843	847,712	969,453	Invested Capital
5.2%	1.1%	1.7%	2.8%	5.9%	6.9%	6.7%	8.0%	4.0%	2.9%	Short-term debt
12.2%	14.1%	12.5%	9.9%	12.6%	20.5%	19.4%	15.9%	18.0%	17.5%	Long-term debt
82.6%	84.8%	85.8%	87.3%	81.5%	72.6%	73.9%	76.1%	78.0%	79.6%	Shareowners' equity
12,664	12,970	14,637	19,147	21,291	23,890	24,028	23,231	21,078	20,693	Employees
3,420	3,705	3,906	3,987	4,935	5,921	7,300	7,486	7,785	7,707	Square feet in use

Returns, ratios and turnovers are based on average monthly assets and capital. Amounts are in thousands except per share and employees.



# Tektronix Worldwide

## **CORPORATE OFFICE:**

Tektronix, Inc., Beaverton, Oregon

## **UNITED STATES MANUFACTURING:**

Beaverton, Oregon  
Forest Grove, Oregon  
Portland, Oregon  
Redmond, Oregon  
Vancouver, Washington  
Wilsonville, Oregon

## **UNITED STATES SALES AND SERVICE:**

Albany, NY  
Albuquerque, NM  
Atlanta, GA  
Baltimore, MD  
Boston, MA  
Chicago, IL  
Cleveland, OH  
Concord, CA  
Dallas, TX  
Dayton, OH  
Denver, CO  
Detroit, MI  
Fort Lauderdale, FL  
Houston, TX  
Huntsville, AL  
Indianapolis, IN  
Irvine, CA  
Kansas City, KS  
Knoxville, TN  
Long Island, NY  
Los Angeles, CA  
Milford, CT  
New Orleans, LA  
Newport News, VA  
Oklahoma City, OK  
Orlando, FL  
Pensacola, FL  
Philadelphia, PA  
Phoenix, AZ  
Pittsburgh, PA  
Portland, OR  
Poughkeepsie, NY  
Raleigh, NC  
Rochester, NY  
St. Louis, MO  
St. Paul, MN  
Salt Lake City, UT  
San Antonio, TX  
San Diego, CA  
Santa Clara, CA  
Seattle, WA  
Syracuse, NY  
Washington, DC  
Woodbridge, NJ

## **AMERICAS-PACIFIC OPERATIONS:**

Tektronix, Inc., Beaverton, Oregon

## **EUROPEAN OPERATIONS:**

Tektronix Europe B.V., Amstelveen,  
The Netherlands  
Tektronix Limited, Guernsey,  
Channel Islands

## **INTERNATIONAL MANUFACTURING:**

\*Sony/Tektronix Corporation, Tokyo  
and Gotemba, Japan  
Tektronix Guernsey Limited, Guernsey,  
Channel Islands  
Tektronix, Inc. Japan Buying Office  
Tektronix Holland N.V., Heerenveen,  
The Netherlands  
Tektronix U.K. Limited, Hoddesdon,  
United Kingdom

## **INTERNATIONAL SALES AND SERVICE:**

Australia—Tektronix Australia Pty.  
Limited, Sydney, Adelaide, Brisbane,  
Canberra, Melbourne and Perth  
Austria—Tektronix Ges.m.b.H., Vienna  
Belgium—Tektronix S.A., Brussels  
Brazil—Tektronix Industria e Comercio  
Ltda., Sao Paulo and Rio de Janeiro  
Canada—Tektronix Canada Inc., Barrie,  
Calgary, Edmonton, Halifax, Mon-  
treal, Ottawa, Toronto, Vancouver  
and Winnipeg  
Denmark—Tektronix A/S, Copenhagen  
Finland—Tektronix Oy, Helsinki  
France—Tektronix, Paris, Aix-en-  
Provence, Lyon, Nanterre, Rennes,  
Strasbourg and Toulouse  
Germany—Tektronix GmbH, Cologne,  
Berlin, Hamburg, Karlsruhe, Munich,  
and Nuremberg  
Ireland—Tektronix U.K. Limited,  
Dublin  
Italy—Tektronix S.p.A., Milan, Rome  
and Turin  
Japan—\*Sony/Tektronix Corporation,  
Atsugi, Fukuoka, Nagoya, Osaka,  
Sendai, Tama, Tokyo and Tsuchiura  
Mexico—\*Tektronix S.A. de C.V., Mex-  
ico City  
The Netherlands—Tektronix Holland  
N.V., Badhoevedorp  
Norway—Tektronix Norge A/S, Oslo  
Spain—Tektronix Espanola S.A.,  
Madrid and Barcelona  
Sweden—Tektronix AB, Stockholm and  
Gothenburg  
Switzerland—Tektronix International  
A.G., Zug and Geneva  
United Kingdom—Tektronix U.K. Lim-  
ited, London, Harpenden, Livingston,  
Maidenhead and Manchester

\*Joint Venture Companies

## **SUBSIDIARY COMPANIES:**

Dubner Computer Systems, Inc.,  
Fort Lee, New Jersey

The Grass Valley Group, Inc.,  
Grass Valley, California

## **UNITED STATES SALES AND SERVICE:**

Arden Hills, MN  
Atlanta, GA  
Edison, NJ  
Elkhart, IN  
Fort Worth, TX  
Palo Alto, CA  
Woodland Hills, CA

## **EUROPEAN OPERATIONS**

G.V.G. International Ltd., Winchester,  
United Kingdom

V-R Information Systems, Inc.,  
Austin, Texas



**Tektronix<sup>®</sup>**  
COMMITTED TO EXCELLENCE