

tek talk

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tek talk

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Address mail to: Tek Talk, Communications department, Joe Floren, Editor.

COVER—A study in intentness is Harvey Hoffman of Fabrication & Molding's Manufacturing Engineering department. Harvey is a member of the plastic tooling group. (Tek Talk photo by Joseph Oswald.)

Some Thoughts about Tektronix Philosophy...

Tektronix is a company of individual human beings. The Tektronix spirit, as it has been called, is above all a concern **for** individual human beings. If we draw our strength from the uniqueness of each individual, together we become more than the sum of our numbers.

We base our philosophy about people — and about business — on the belief that the goals we share, as a company, need not conflict with the goals we seek as persons.

At Tektronix we all are employees, although our jobs differ. The division of some companies into "management" and "labor" groups may imply that the aims of the organization conflict with those of the individual. We believe they do not.

As Tektronix, what goals do we share?

Like any business, we seek to make a profit and to grow. By serving science in particular and society at large with our skills and products, we seek to contribute positively to the world in which we exist. We also try to provide, truly, a good place to work — and to be thought of not as a company with many employees but as many people who, together, are creating a company.

As individuals, what goals do we seek?

We believe each person also wants to grow—to do a good job, to be proud of what he has achieved, to receive not only material reward but also the respect of others. These individual goals dovetail with company aims for high quality, fair price, excellent service, thus increased value and satisfied customers.

We believe that a company benefits by building in and strengthening human judgment. You cannot **order** judgment, but you can provide the environment in which it grows. And so we favor those practices that encourage each individual to make judgments that meet both company and personal needs.

We know our company is not perfect. Certainly mistakes will occur. We view them as something to learn from, not something to punish for.

Two persons in similar situations may make different judgments. We respect and encourage these individual viewpoints, believing that each person should receive continuing opportunity to influence, and thus help, other persons.

We feel sure that although a business which ignores values other than profit — human values — may prosper, it does so at the expense of society.

A road from one point to another is not always smooth or direct, but it still provides a means to your destination. In its winding, it sometimes takes you the wrong way; yet you know the **overall** direction prevails and the destination doesn't change.

So it is with the company: Each sound judgment may not satisfy all individual needs and meet all company goals. But we believe that our best judgments, taken all together and over the long haul, can bring us nearer that destination.

Like any organization, ours requires authority — but a person's authority at Tektronix is over the job to be done, not over the people doing it. Here, the power to influence should depend as much as possible on the worth of an individual's judgment and on the nature of the particular situation. Some people do have more authority, more responsibility and more pay than others. We try to avoid the view that these factors are a statement of someone's worth—a statement that he is superior **as a person**.

We believe people react positively when confidence is placed in them and when the best is expected of them; we try to reflect this belief in our work relationships and with customers and suppliers. We call this our honor system.

We believe people derive greatest satisfaction from completing those tasks that require them to exercise judgment; thus, that it is better to educate them than to command them.

How do you describe a company? It's one thing to an engineer, another to a production worker, another to a supplier, another to a neighbor. Its value is measured on many scales.

These values must shift continuously, interacting in delicate balance, so none will be sacrificed for the others.

How do you maintain the balance? How prevent the sacrifice? There is no one way. There is no easy way. But the balance must be kept, and the sacrifice avoided.

"Some Thoughts about Tektronix Philosophy" was written and re-written by Joe Floren as a composite of many people's views expressed in many discussions and interviews. I have been closely associated with the project and have taken an active part in the writing.

While this is not a complete statement of Tektronix philosophy, I feel it does contain ideas and principles which will be useful guides in the many day-to-day decisions everyone must make. As such, it has my endorsement and approval.

If anyone feels he can suggest improvements in expression, has additions or illustrations which would expand or clarify it, or—most important of all—differs with it, please feel free to contact Joe or me. We feel sure that with your help a more useful and comprehensive statement of Tektronix philosophy will be written, as we learn and as conditions change.

—Howard Vollum
President

An employee walked into his office area one Monday morning and found that over the weekend carpenters had put up a wall — between his chair and his desk.

And so Tektronix grows—often in unexpected ways.

Growth shows many faces. At its most confusing it can seem a great, buzzing, aimless chaos. How does it look to a befuddled employee? Maybe like this:

Profit gyrates in unpredicted directions. Inventory grows; at the same time, instrument shortages appear. Overtime runs high, is abolished. Yet, hiring continues brisk. We hear a new, worrisome phrase: "Cash bind".

Then, just as we take a deep breath, Fortune waxes whimsical. Instrument orders tumble in — in huge, record, undigestible masses. Inventory vanishes, or pretty nearly. Shortages become a nagging reality. Overtime is ushered back in.

Profit share plummets; TEKEM value climbs. Halls ring with the hammering of walls going up — or being knocked down.

The employee sits at coffee break, nibbles a doughnut and tries to fit the puzzle together. Probably he finds he doesn't have all the pieces; all he's sure of is, the puzzle is there.

So he sips his coffee and sighs, sustained by his trust in Tektronix and a strong hunch that there's a plan behind all the commotion, that it's not just one huge stumble forward.

Complained one Tek: "Not know the answers? I'm so confused I don't even know the questions . . ."

To what end all these goings on?

Among the more obvious signs of growth are new buildings rising out of the earth, one and two a year. Even while construction moves to an end on our new Electron Devices building — and while our master building plan goes through its umpteenth revision — managers in such crowded areas as the Interim Office building view empty space with wistful eyes. "As near as I can figure, people have spoken for 150 per cent of the available space," reported one building coordinator wearily.

In spite of what the squeeze and quick-change master plan might indicate, our

building program has followed a regulated growth ever since 1958.

"In five years (ending in 1963) we'll have built a substantial facilities complex — very little of it requiring outside financing," comments executive vice-president Bob Davis.

Our shift to the Sunset plant in 1951 failed to solve our growing space problem. When we moved in 1958 into what's now the Metals building, we hoped to expand that structure to meet our growing needs. It soon became apparent that this approach would be inadequate. We deferred our construction until we could

WHAT'S AHEAD



GROWTH

come up with a master plan — a plan that would be flexible enough to change with our needs, but one which at any stage in its development would give an integrated facilities complex.

And so the plan has changed — to some eyes, radically — as our growth has outpaced our guesses. Until this year (and even this year, in some few areas) we've been crowded. But now, daylight is showing.

For the first time, we have a complex of single-purpose buildings. In the past we have had to repair and tear down or remodel, or make do with what was available.

Fingers Crossed?

"It's unlikely we'll ever again be caught in this kind of facilities squeeze," says Bob Davis. He may or may not have been crossing his fingers.

Although we can, and do, point to our building program as one which needed little outside financing, the problem of cash itself is growing as the company grows.

Cash flow, in and out, never is smooth; good management often means borrowing money. "It's better to borrow now," explains Treasurer Don Ellis, "than to defer an investment we ought to make."

It's hard to predict exactly when cash reserves will run thin, although it relates to many factors, among them the rate of personnel growth. When we hire heavily, the cost of training and equipping new people naturally jumps. A spurt in growth usually means we defer some profit.

When we grow, it means we must increase many kinds of investment:

1. Investment in **facilities**—buildings, and the equipment to fill them.
2. Investment in **inventory**. We need more instruments on hand, and more parts to make them from.
3. Investment in **accounts receivable**—in the money our customers owe us in their charge accounts.

And Tek covers these costs in three ways:

1. By the **earnings** we retain.
2. By an increase in **accounts payable**. In short, we increase our charge accounts with suppliers.
3. By **borrowing**, or obtaining capital by other means.

Can Predict, Somewhat

You can predict certain cash outgo by the calendar: Tax payments in February, May, August and a bigger one in November; TEKEM disbursements in June and December; Tektronix Foundation and Retirement Trust contributions in July.

To meet these peaks of spending, a company may do one of two things: it may accumulate a cash fund, or it may borrow. We have preferred to use money as a tool of business, spend it as needed and borrow when necessary, rather than keep idle funds on hand just to meet the peaks.

Tek now is so big that our favorite bank can't handle all our needs. Our international expansion means that not one but several banks now serve us.

Our borrowing normally lumps up in July and August, when most of our predictable expenditures occur. The September 1961 squeeze on our cash supply resulted from unexpected factors adding onto the expected peak. Finished inventory accumulation, both in Portland and in Europe, and cash accumulation overseas were the big ones.

We were surprised by the fall cash bind, Don adds, because we haven't yet completed our trend to coordinated planning—which carries with it the responsibility for each area to let the planners know, in advance, its expected needs that will use up cash.

Thus the bunching of cash demands which occurred this fall wasn't completely anticipated. Had it been, there would have been no bind.

"We're reaping some of the effects of our activities six or eight months ago,"

Bob Davis points out. Domestic Manager Bob Fitzgerald agrees: "The bothersome thing wasn't that we got in a bind, but that we didn't know it was coming."

Rebounded Into New Problems

As it happened, while adjusting to reduce cash flow, we ran smack-dab into a great and sudden upsurge of large special orders. As inventories were shipped to satisfy some of these orders promptly, we faced a new problem: How to meet deliveries? This sudden upturn in orders will slightly ease our cash "tightness", but we have already made arrangements to know our needs better and to meet them.

How does the availability of cash — or its unavailability — affect profit share?

Hardly at all. Yet, there is some slight relationship. That is, by speeding up the rate at which we build our inventory and hire people, we not only drain our cash reserves, but also defer some profit share: An instrument inventory is not — at that moment—yielding profit; an employee just learning the job is not—at that moment—producing at his maximum.

But just as borrowing tends to peak when we're hiring and training, it tends to slump when new hires and trainees become experienced and productive.

As the accumulated finished inventory moves out and turns to sales, our investment is returned as profit to share.

It's historically true, Don points out, that high profit share relates to our periods of least growth. Is long-term growth, then, a fair substitute for extra profit in the pocket right now? Employees—maybe even the one who mutters loudest over skinny profit share—probably wouldn't have things otherwise.

When profit wavers, people casting about for reasons why may eye suspiciously the growth in Tektronix staff and nonproduction personnel. Yet, it may well be that the trend toward a higher ratio of nonproduction to production people results in more rather than less productivity.



Photo by Don Alvey



For example, a toolmaker — who's not a direct production man — may boost profit by helping someone else produce more at less cost.

The whole problem of mechanization enters here. Because it's easier to mechanize production than it is to mechanize selling, or engineering, or staff services, our trend is like that of many other companies: An increasing percentage of nonproduction people. But our goal remains: More sales, more profit per employee.

Equipping the production person costs more in most cases than equipping the nonproduction person. The former needs tools; tools cost money. So, as the ratio of nonproduction to production people goes up, the cost per employee may go down.

Tekintag Booming

Strange things happen at home, to profit, to inventory. Yet Tekintag, our overseas operation, shows signs of bustling for some time. The question recurs: Why are we there?

For one primary reason: To stay competitive in other countries, in spite of trade restrictions such as tariffs and quotas. Foreign competitors, subsidized by their governments' protection, could even threaten to make inroads into our own domestic market, if we fail to stay on an even footing with them in their own countries.

Two, to head off overseas competitors — competitors which, unchecked, might make inroads into our own domestic market.

Until our manufacturing operation in Heerenveen, The Netherlands, begins full-scale production, we have to expand our Portland capacity to meet the world demand for our instruments that is not met by Guernsey.

We anticipate, Don says, that the foreign market will continue to grow faster than the domestic one for some years. The problem — a neat trick for corporate management—is to correlate the expansion of our overseas manufacturing capac-

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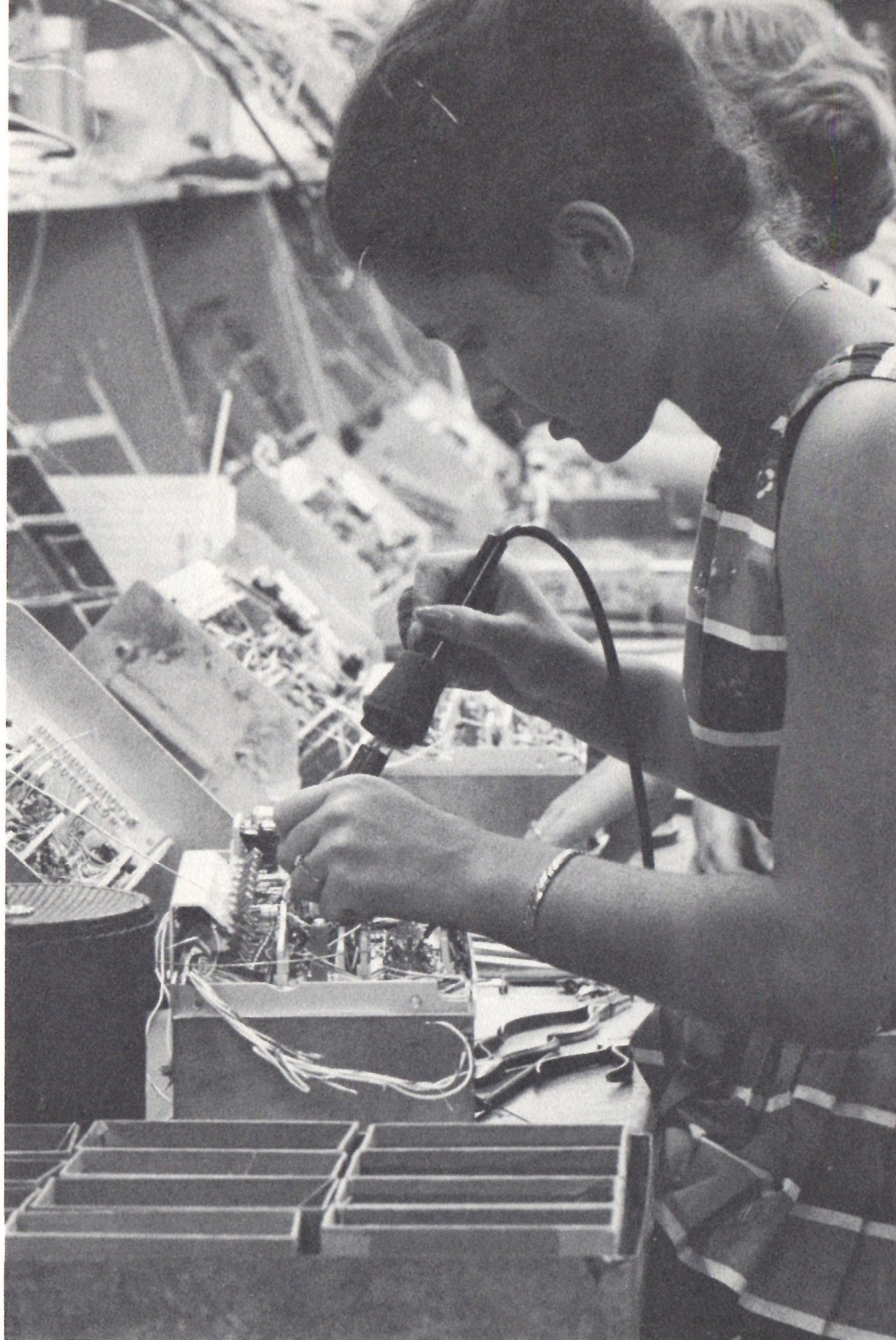
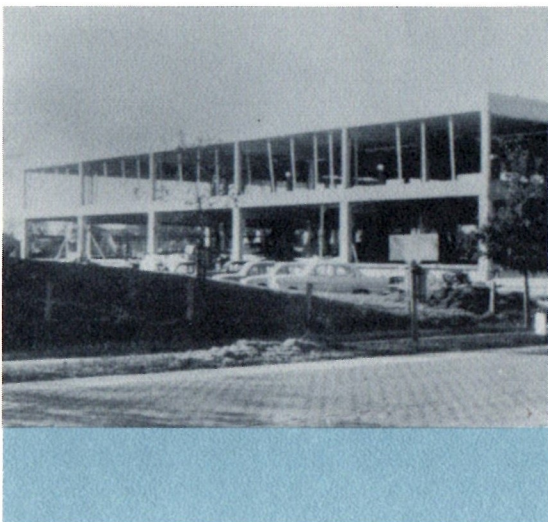


Photo by Howard Vollum



ONE "GLAMOROUS" facet of our growth is the overseas expansion program. At far left is a party of Tektronix personnel in a summer visit to Heerenveen. From left, Howard Vollum; Kees Roest, accountant; Bob Davis, and Earl Wantland. Man at right is unidentified. Center photo shows the building in which Tekintag offices are located in Zug, Switzerland. At right, a replica of our domestic assembly buildings rises in Heerenveen. Above, an assembly line scene in Guernsey is a duplicate of many in Beaverton.

GROWTH

ity to remain slightly less than the increase in orders, so we'll have no need to reduce Portland manufacturing capacity. "We'll do it, too," predicts Don.

Ever since Tektronix was an infant, it has been our goal not to lay anyone off for lack of work.

TEKEM One Way, Profit Share Another?

Here's another puzzler: TEKEM value may grow as profit share dawdles. Why? Is there any relationship?

Not directly. Tek profit share, though, generally is highest when growth is least. On the other hand, TEKEM value ties directly to company growth and increases with it (or just a step behind).

Another way to look at it: TEKEM relates to **total** corporate profit, profit share to profit per person. If payroll increases faster than profit, profit share declines. If profit increases faster than payroll, profit share goes up. But if **total profit** increases, TEKEM probably becomes more valuable.

Our effort always will be, as it always has been, to have people do jobs which require "people skill"—and machines do jobs which become monotonous. To this end we have geared our entire training program, seeking to develop versatility, adaptability in each of our employees.

Our goal remains: Stability of employment. And this is no altruistic move. For it is the long-term employee who is our strength. It is he whom we can train in new skills. With this broadened ability, he can shift to other jobs as our needs change.

Our whole approach to voluntary education also fits. "A person," says Bob



"Boiled fringe benefits, what else?"

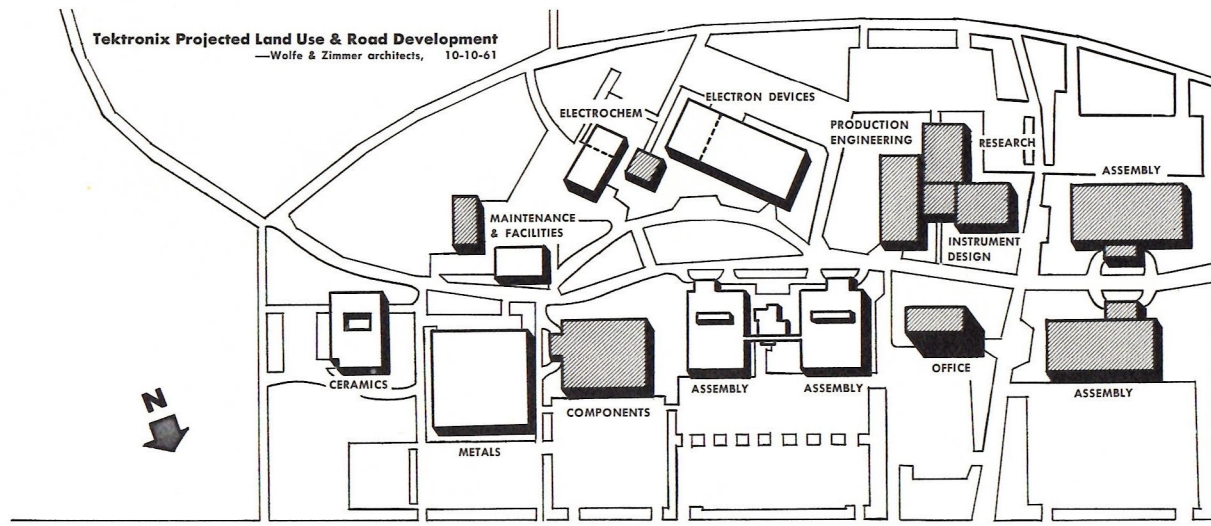
FLUCTUATING PROFIT share was the target of this good-natured jibe by Jim McGill of Customer Service. At the same time, TEKEM share value continued its merry increase.

Davis, "must keep educating himself or he may be left behind. This is a major company concept."

It is most likely the long-term employee who sees change as a meaningful thing. To the short-term employee, change is apt to be only a sudden shift,

a plummet or leap of profit, a wall coming down, a quick change of direction . . .

To the long-term employee — if our management continues sound and our history tends to repeat — change will continue to mean progress. Or, to him, reliable, rewarding employment.



LATEST DEVELOPMENTS ON Tektronix's master building plan are indicated in the above map.

Existing buildings are shown in white; proposed structures are cross-hatched.

Map by Dick Koe

Ideas that have built Tektronix:

No. 3: BOB FITZGERALD

(Believing that Tektronix owes its stature not only to its research, productive and engineering skills but also to the unique and vigorous personalities of its leaders, Tek Talk has undertaken a search to learn just what some of these people believe.)

This is the third in a series of interviews. Bob Fitzgerald was appointed last summer as general manager of Tektronix domestic operations.)

Is it true you began work at Tektronix as a janitor?

Yes.

That was in October 1948, while I was a student at Portland university. After that I worked in Cabinetizing, then as a receiving clerk in Shipping, next as a buyer in Purchasing. Then I was drafted into the army.

When I came back from the service I worked in Stock on swing, then became a buyer in Purchasing once again. I was named purchasing agent, then was made materials manager in charge of warehouse, purchasing and scheduling and—later on—manufacturing data processing and manufacturing cost services. I was appointed controller—and head of the Finance division—and last spring became domestic manager.

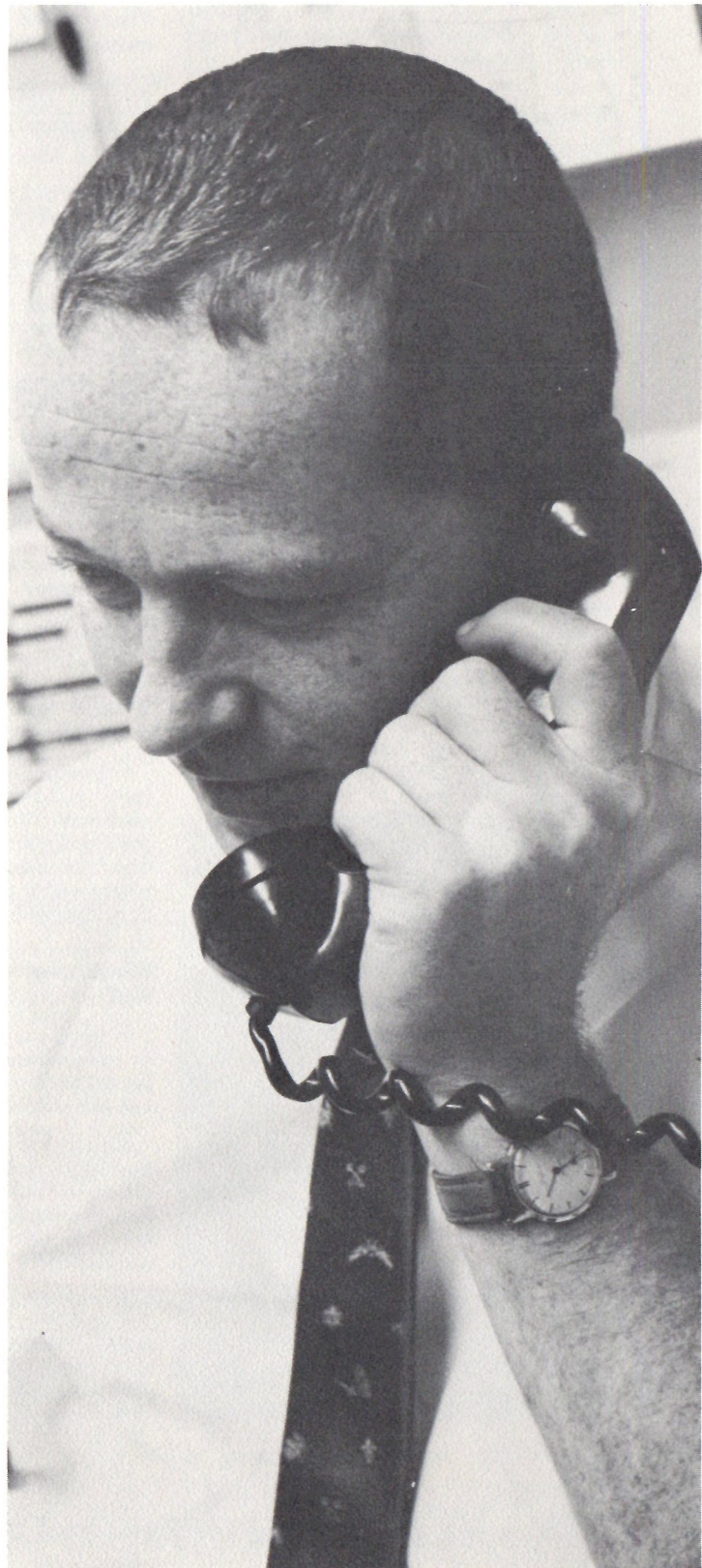
Of my 13 years at Tektronix, I've worked 10 years in Manufacturing.

As domestic manager, what are your responsibilities?

They encompass quite a bit. They include management of the marketing, manufacturing, financial and administrative tasks of the domestic operation. This includes about 4500 people.

My responsibilities include working for Bob (Davis) as operational manager of the domestic operation, and as a staff

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**"A manager is no better
than the sum of the people he manages..."**

"FITZ"

member to him in dealing with corporate and international problems, as they relate to the domestic operation.

What do these responsibilities entail?

Providing financial statements, providing costs, enabling the corporation to set reasonable prices for its subsidiaries;

Helping coordinate the relationship between Engineering, a corporate function, and Manufacturing, a domestic operation;

Providing planning data;

Implementing policies in Marketing and Finance and Manufacturing, as Bob establishes them.

What are the unique features of the domestic operation?

I don't think the domestic operation is unique.

What changes have resulted from the company reorganization last summer?

We're making no basic changes in goals. We're trying to accomplish what we always **have** tried to accomplish. Probably, though, there will be quite a few changes in the methods by which we approach these goals.

One change was making Quality Assurance a domestic staff function. In the past, every area had something of its own in the area of Quality Control. The advantage of putting this job on the operational level is essentially the assurance it gives us of continually supplying our customers with the best quality and value we can. Another advantage is in making managers aware that quality and value are most important aspects of our total job.

What is the responsibility of the individual manager as regards quality?

There is no change in the responsibility of the individual worker and work leader. **They** must provide quality and value. The domestic Quality Assurance function does have the ability to encourage value, and to reconcile differences of opinion between operating units as to standards of acceptance.

What other major changes have you made, or are you making?

One, we're emphasizing a return to—and a strengthening of—the inline process of communication. Another, we've established a domestic planning operation.

There is great need for planning. One purpose of this program is to let managers know, jointly, where they're going and what resources are required to get there.

Some manifestations of our need for planning are:

Our heavy investment in inventory; shortages of space; delays to customers; discrepancies in our capital expenditure recommendations and revenues; poor phasing in hiring personnel to meet production expectations.

How much headway has Domestic Planning made?

It's going a lot more slowly than I would hope.

What is the individual manager's responsibility as to planning?

Planning is a major responsibility of every manager—whether or not he has a planning staff. Domestic planning is principally staff to me, to help me present the managers with information on where we're going, in terms of our products, facilities and manpower needs.

What other changes do you see coming?

I think you can expect to see changes in communication practices, as I mentioned earlier—also an emphasis on training and development.

You can look forward to more integration of manufacturing activities; a clarification of Engineering and Manufacturing/Engineering relationships, and improvements in the process of introducing new products.

In the area of general planning we're discussing Marketing—Manufacturing relationships that may involve some changes in methods and responsibilities. I look forward also to making better use of in-

formation available in the field on current and new products.

How do you evaluate the domestic operation's progress so far?

I'd say it's satisfactory. But it's slower than I'd expected.

For what reasons?

One main hurdle is the inability to make fast decisions.

A tremendous number of different kinds of problems comes up. Our operating managers meet 7½ hours a week discussing these problems: Quality, planning, new products, wages, communications space, training, processes—

What are the advantages of these group interchanges?

The biggest one is the realization that there are very few steps a manager can make that won't have implications for other managers, or other operations.

Before a decision can be made, these implications and effects must be considered. If not, the affected manager won't have the opportunity to discuss it with his subordinates. Thus we remove the possibility of the most important feedback—from people in the work process—to contribute to our decisions.

You apparently value highly the input from persons directly in the work process?

Yes, I do. A manager is no better than the sum of the people he manages.

Do you object to authoritarian management?

"Authoritarian" has a bad implication. I believe in the concept of **authority**, but authoritarianism means to me **unbalanced** authority.

Do you favor command decisions in any circumstances?

Command decisions sometimes are necessary. When evidence for and against a matter is in close balance, the manager's judgment needs to be called on.

The judgment of a manager can be improved to the extent that he is knowledgeable of the work processes affected. This will demand a continuing open communications channel to the manager.

How does the inline communications process relate to our total enterprise?

It seems to me it relates in this way:

Increasing the concept of delegation—delegating to the point at which the best decision can be made—requires an open line between the manager responsible for the total results of the decision and the person who can best **make** the decision.

I feel that the worker is closest to the job; his manager is next closest, and so on. I consider the flow of communications through inline channels a back-and-forth rather than an up-and-down process.

What happens if a manager violates the inline chain?

If the process isn't followed, chances are **good** that the evidence—and the decision itself—won't be the best. Chances are **certain** that there will be dissatisfaction on someone's part as to how the task was handled—and, in my opinion, that person is justified.

Is delegation a key concept in your managerial approach?

Delegation, in my mind, is the **most** important concept in management. It's also one of those tricky words. No manager (or worker) can delegate, or be relieved of, the **accountability** for the tasks assigned him.

This concept, I think, often is misunderstood. As a result, we've seen abandonment, rather than delegation, of responsibility in some instances. One can delegate a task only to the extent that he passes on guidance, and gives purpose and direction. Some risks just can't be delegated.

In my opinion, delegation is the key to broadening work responsibility. Hooking more load on everyone (I mean the load of more responsibility) will bring better work results. This is true because it allows decisions that are closer to the

facts. Judgment improves; decisions improve; **results** therefore improve.

Real delegation takes guts. It's hard work. It means personal encounters with one another on every work process and every task.

I know damn well there are more of us around here who are capable of, and who desire, more responsible work than there are those who are working above their heads. The job ahead is to hook more load to more people. I think they want to pull it.

What are the greatest strengths of Tektronix, as you see them?

A great strength is our diversity of skills and competence and much-better-than-average respect for mutual goals—an identification of company goals with what the people themselves desire.

How about weaknesses?

Our biggest weakness is our exposure to the loss of appreciation of this fact: That all of us will be better off to the extent to which we can continue to give the customer value and service—and to optimize the use of all our resources to this end.

We should talk more about strengths, because we have more strengths than weaknesses.

I believe the principles set down by original Tektronix managers were very good and very sound; they have continued as the company has grown. Our problem now is to see to it that these principles are communicated to everybody in the company, and that they're understood.

They **do** still apply; they're the kind of things that don't change. A lot of the company's success is attributable to these principles. They are among our strengths—to the extent that we've been able to put them into practice.

Is growth a problem in this respect?

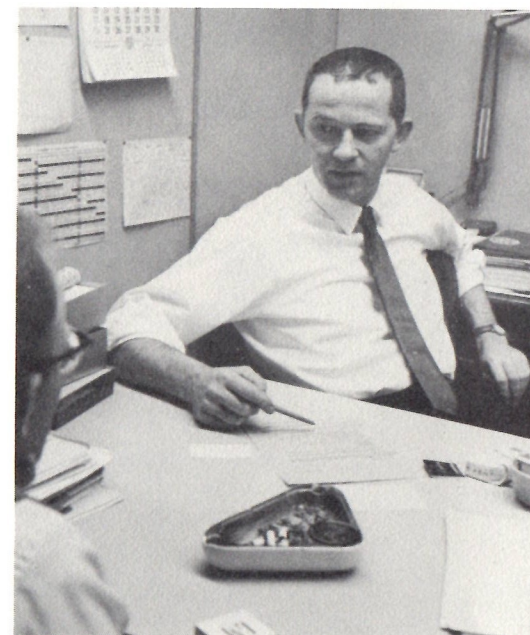
We've gotten bigger and more complex. However, I feel that complexification is a sure sign of development. Man is a pretty complex organism—he has many vital organs, which work in an amazingly integrated fashion. He also has

his ills and pains. **Any** complex organism has its problems. These usually are not serious as long as they're attended to and not allowed to spread. So it is with a company.

Growth in complexity is a natural development. Our task is to provide and maintain the Tektronix environment. Probably the most important factors are the abilities and attitudes of the people in the organization, and the atmosphere that will keep the attitudes healthy. If we preserve these, no one will outproduce us.

We're trying to maintain the traditional Tektronix environment, rather than change it—and to improve some of the situations which cause obstacles to it.

To me, we all create and share that environment when we work at supplying the best value available in the field; when each of us **knows** we're doing this; and when each one wants to do still better.



"...We've gotten bigger.... I feel that complexification is a sure sign of development..."

...The job ahead is to hook more load to more people...."



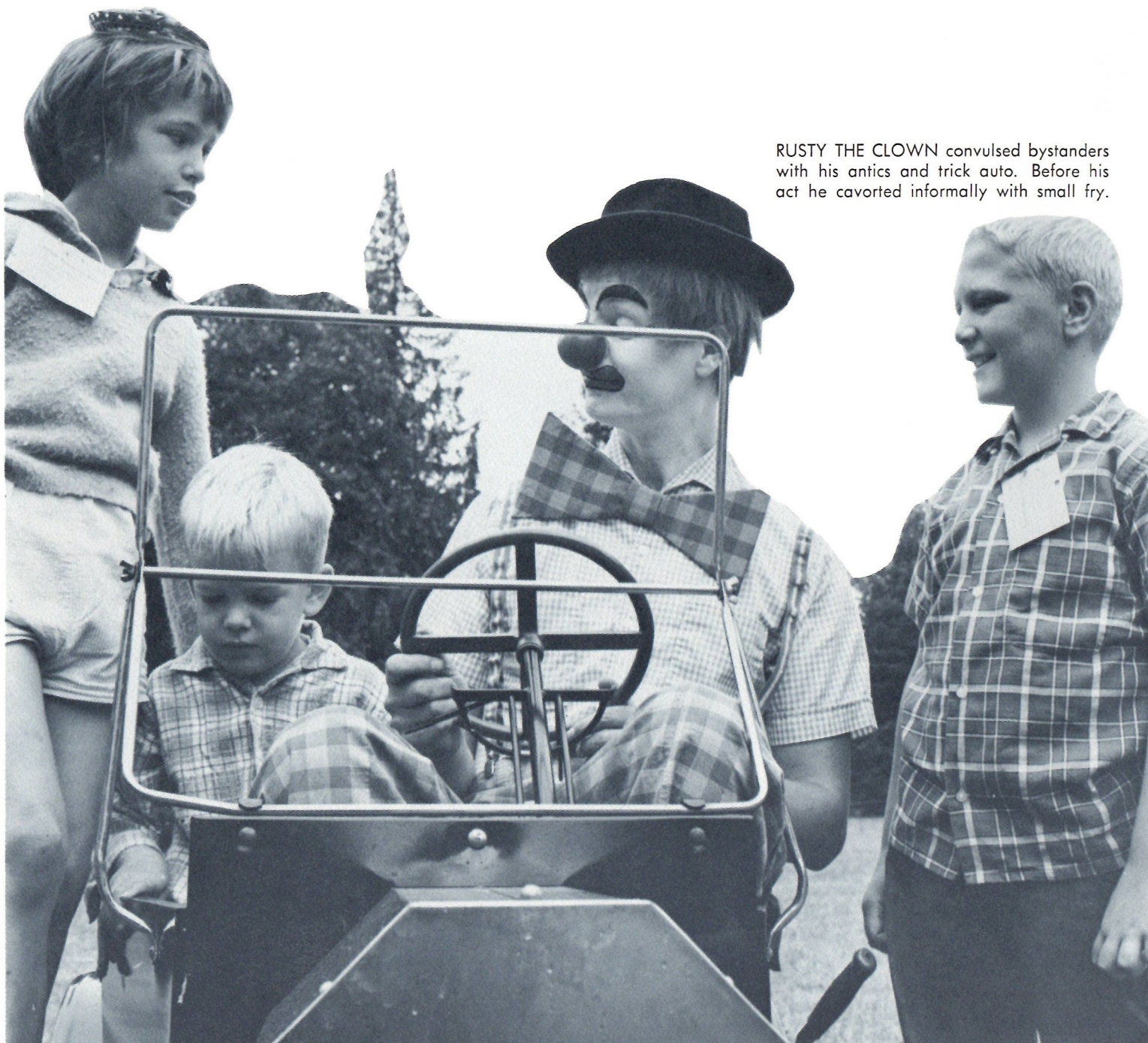
PICNIC photos?

AN OLD GAG, but it worked again. Parents and kids teamed up in a marshmallow-eating contest. The 'mallows, unknown to the participants, were dipped in black food dye.

Well, why not?

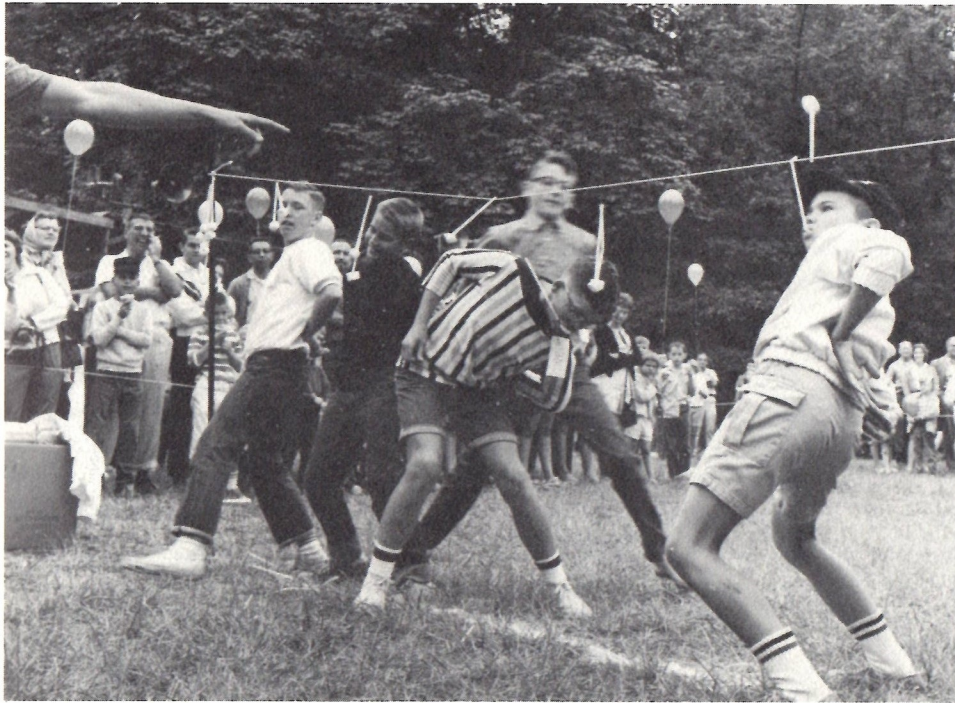
What with temperatures low and winter winds high, it's kind of pleasant to think back to summer. Rummaging through warm weather photos, the staff came across these mementos of the company picnic in August, photos which may give winter-weary Tekers a few sunny moments.

RUSTY THE CLOWN convulsed bystanders with his antics and trick auto. Before his act he cavorted informally with small fry.



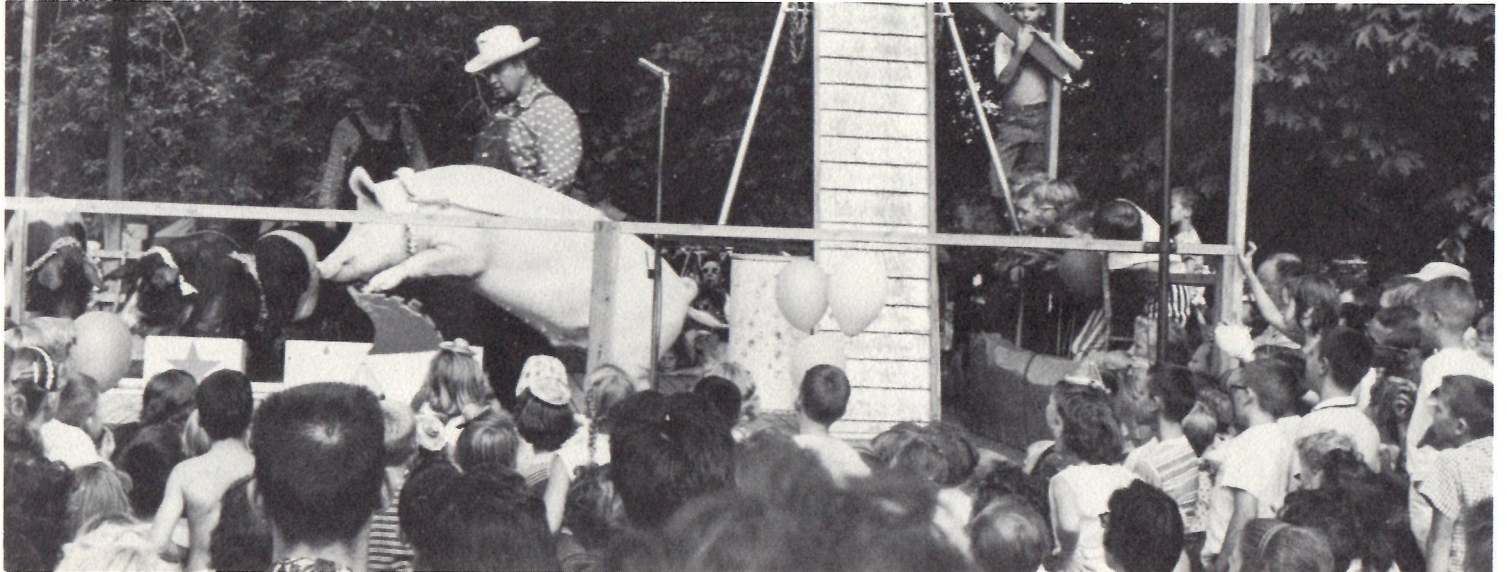


OVERLOADED BUT still operating on a flat tire was the "shuttlebus" from the parking lot.



KIDS COMPETED at devouring hanging marshmallows.

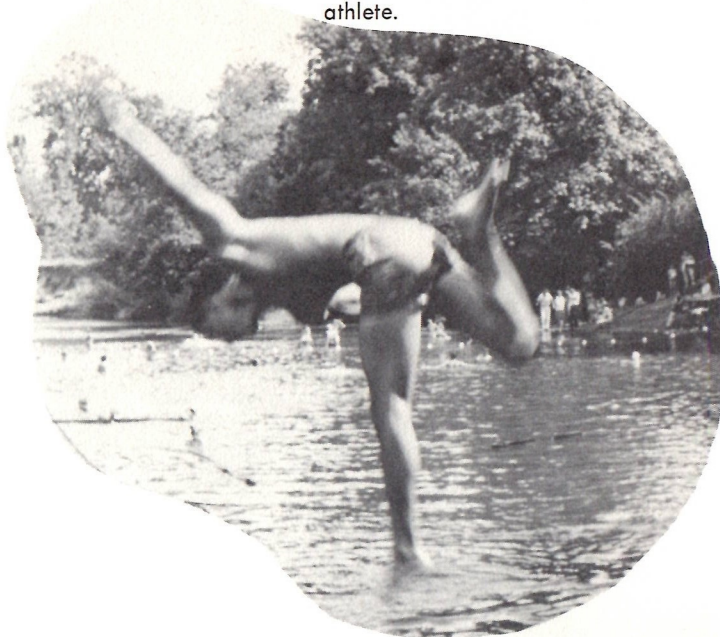
UNCLE HEAVY AND his tricky hogs starred in the afternoon stage show.



PUDDING RIVER was loaded with swimmers, some even more graceful than this athlete.



TRIP TO DISNEYLAND was won by Virgil Winner of Building Services. Here Jim Castles calls out winner's (Winner's) name.



ED McDONNELL was a big hit— although unrecognizable — as a sad clown.



GALE MORRIS, Tek industrial designer, accepted plaque from Calvin Townsend, director of the 1961 WESCON show in San Francisco as Don Brundage, judging committee chairman, stood by. At bottom of this page is the Tek P6025 cathode-follower probe, recently featured in the nonconsumer tool division of Industrial Design magazine's annual design review. The design highlight of the high-frequency probe is its air intake grille, the magazine commented.

Industrial Design

By **DICK KOE**

Tek has a habit of astounding onlookers at IRE and WESCON. Take the past year:

- At IRE in New York last March, Tek surprised visitors with the speed with which its new display booth went up and came down. The booth's highly functional qualities—to say nothing about its eye appeal—also impressed the public. Each section of the booth folded up and became its own packing case.

- At WESCON in San Francisco last August, Tek's new tilt-locking scopemobile and high-frequency probe won approval from the judges at the Third Annual Industrial Design Award program. The scopemobile and the probe were among 23 entries selected for the award

of merit, and the scopemobile was one of five products chosen for the award of excellence.

These achievements reflect the talent and efforts of a highly specialized group known as Industrial Design—headed by Gale Morris. He and his assistant Bob Metcalf, together with Mechanical Engineering, devote full time to industrial design of Tek products and instruments. Gale's group and Mechanical Engineering are part of Bill Polits's Instrument Design Engineering division.

Display Has Eight Modules

Gale and Bob devised Tek's impressive modular display system, which has appeared at leading electronics shows



throughout the nation since its debut at IRE.

Built in eight identical modules, five feet wide and eight feet high (plus one larger unit containing a coat rack), the booth becomes individual cases when packed, each measuring 30 x 50 x 60 inches.

It is made of plywood, formica, walnut veneer, extruded aluminum and sheet metal. With all eight modules, the booth stretches 40 feet long, fitting snugly in the exhibition space at IRE and WESCON. The modules are interchangeable.

The entire project, from preliminary ideas and sketches to the finished modules, was completed in two months for use at IRE. Assisting Gale and Bob were Art Mohr, who made the prototype; Bill Root, and Mechanical Engineering department.

How fast can the booth be erected? "We did it in an hour and 40 minutes the first time around," Gale recalls. "Of

course, we understand the design inside out, but assembly time shouldn't take more than three hours for those not acquainted with it."

Handbook Compiled

To assist field personnel in assembling the booth, Gale and Bob compiled a 28-page handbook, complete with instructions and photographs. It also contains diagrams and specifications of each module part, so replacement parts can be ordered if they are damaged in shipment or use.

Gale describes the modular display booth as subtle, subdued, and not spectacular—representing the company "the way we want it to be done". Its appearance brought enthusiastic approval from our field engineers, and many exhibitors have been heard to wish that they had one just like it.

Possibly the highlight of the year for Gale's group was the industrial design

**Their
Talent and Effort
Reflect in
our Instruments -
and in the Booth
to Show Them**

Industrial Design

contest at WESCON, where two of their product designs—the Type 201 scopemobile and the high frequency probe—won merit awards among 172 entries. The scopemobile went on to win an award of excellence.

The judge chose the scopemobile as one of the five finalists for "its pleasing color scheme, sturdy construction, ease of operation and fine detail work."

Gale was design director of the new scopemobile, with assistance from Archie Yergen, now of Militarized Products Engineering, and Leon Prentice of Mechanical Engineering.

Customers Offer Ideas

"We started this new scopemobile design because of customer requests and field engineer recommendations," Gale notes. "Possibly the two leading features of this new mobile are its quality and low price. These were made possible by extensive tooling."

The new scopemobile has four types—201, 202, 203 and 204. Designed for the busy engineer, all have easily adjustable trays at whatever height or angle desired. A total of nine tilt-lock positions are possible—six upper levels and two lower levels. The tray adjusts through 36 degrees in six 4.5-degree steps upward from the horizontal axis and two 4.5-degree steps downward. A convenient handle operated with one hand makes the adjustment of the tray easy, even when it is heavily loaded.

All four types are mounted on five-inch rubber-tire wheels for easy movement around the work area. Optional plugin carriers are available for storing extra plugin units. The scopemobile is constructed mostly of aluminum with anodized finish on handle and legs. Other parts are painted with tough blue vinyl. Dimensions are 17½ inches wide, 35

inches high, 27 inches deep; and the weight is 35 pounds.

Probe For N Units

Gale teamed up with Bob White of the Accessories group, Mechanical Engineering, in designing the high-frequency probe—the P 6025 cathode-follower. The probe, designed for the N unit, will be in regular production shortly after the first of the year.

Form and function were the main consideration in designing the probe. Two other probes—P 6032 and P 6029, scheduled for production next year—follow the same approach.

Besides the scopemobile and probe, Gale's group has designed numerous other Tek products. A major project was packaging of the Type 321 transistorized portable scope, complete with carrying handle.

How does a design group approach a problem such as designing an oscilloscope or one of its accessories?

"I believe the approach can be called 'Conceptual Thinking,'" Gale suggests. "We start from the outside and then work in. We ask ourselves what job the instrument has to do and what its relation is to the operator. The answer points out an approach to solving the design problems. The design must be workable."

Joined Tek in 1958

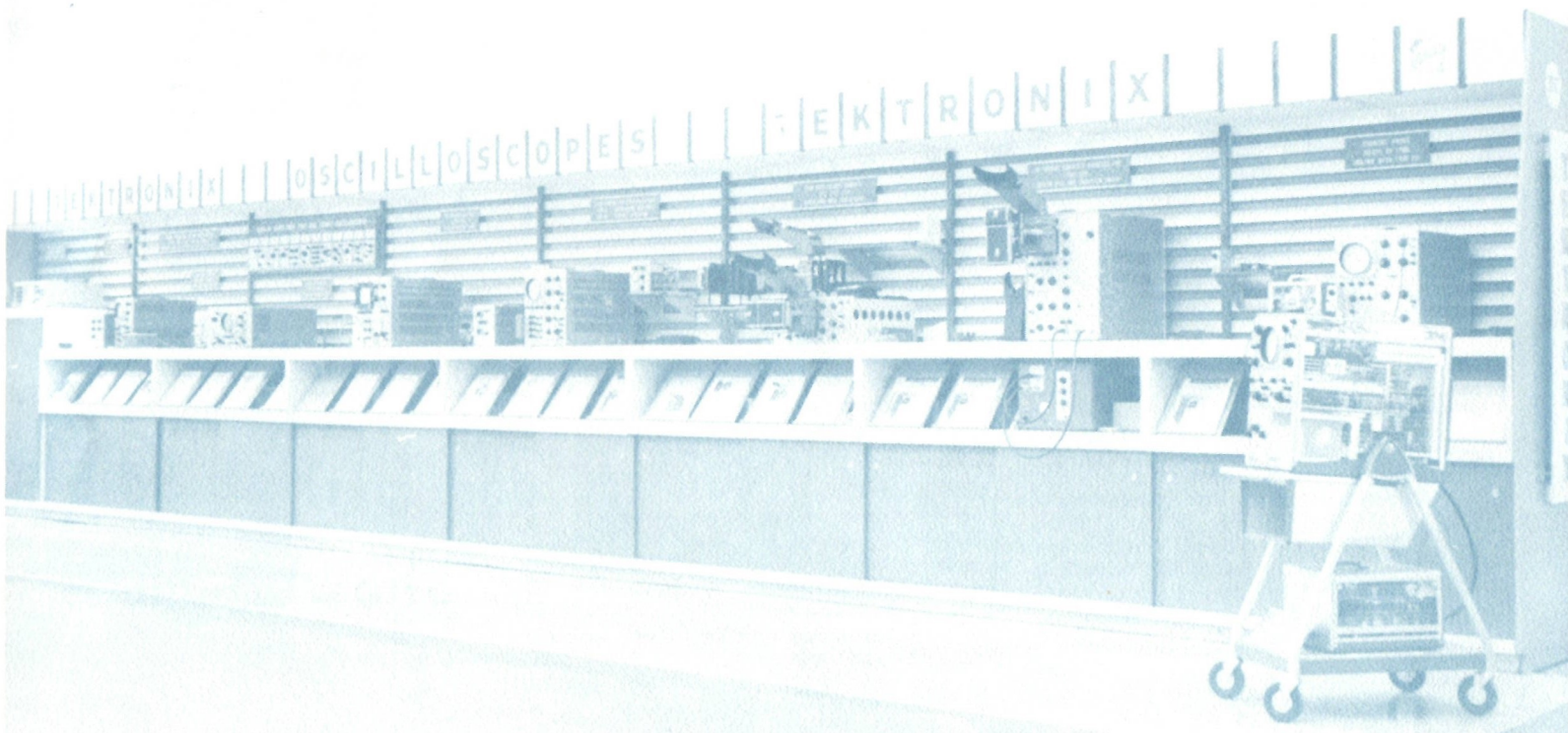
Gale came to Tek just three years ago from the Art Center school in Los Angeles, where he graduated in industrial design. At that time Tek had no Industrial Design group. Designing instruments then had no formal approach. Nevertheless, Gale believes Tek turned out some high-quality instrument designs.



PRIZE WINNER is Tektronix' model 201 tilt-lock Scopemobile above; at bottom is Tek's modular display booth, which includes eight identical sections. It features ease of setup and takedown, and may be used in any combination of modules, for big or small shows.

Bob joined Gale in the Design group a year and a half ago from the University of Washington where he majored in industrial design. Together they work in inconspicuous quarters (the main entrance is a fire door) at the Sunset plant.

Interested in how Tek products are designed? Make a visit to Gale and Bob. Chances are you'll find them hard at work on new projects—projects which will astound onlookers at future electronics shows.





OUTSIDE, LOOKING IN

Dr. Alex Bavelas, Psychologist, Business Consultant, Views Tektronix

(Dr. Alex Bavelas, psychologist on the staff of Stanford University Graduate School of Business, visited Tektronix in December as a resource person on organization and interpersonal relationships. He consulted here with Bob Davis and his corporate managers.

Dr. Bavelas, a student of famous Gestalt psychologist Dr. Kurt Lewin, has been a consultant to many firms, including Lockheed and Ampex. He conducted research at MIT on communications models, organization models and group operations, and worked at Bell Labs studying the psychology of men operating equipment. He has a doctorate from MIT.

Unlike many Tektronix visitors who are (a) impressed, (b) dismayed, (c) confused, (d) astounded or (e) none of these—Dr. Bavelas left behind him some graphic comments about the Tektronix he saw: First, in this interview for Tek Talk; second—and more intensively—in a two-hour session with Bob and his group. This meeting followed two days of conferences with individual managers and staff.

In his confidential session with the group, he analyzed company organization. In the interview below, his comments are more general, but center largely on communications systems.)

"Tektronix is lousy with romance," said Dr. Alex Bavelas.

"You admit you're young—and fallible—but you have pride in what you're

doing, and there's a feeling throughout that something's about to happen.

"It's an exciting company."

Looking at Tek, he saw high motivation, optimism, modesty, enthusiasm, confidence in the wisdom of management and a willingness to use ability whatever its source.

Rose-colored glasses? Not his.

He also observed smugness, feeble communications practices and more than a little confusion.

"People here are intensely motivated," he commented. "Each one talks like a member of the original family."

The feeling that "things are about to happen" is not typical of all companies, nor is the Tek awareness that the company's success is due to the result of general effort, nor is the individual feeling of directly participating in that success.

"Here there seems to be a view that the person is evaluated in terms of what he can do and not where he was educated; a willingness to use ability wherever you find it, and a feeling that the individual is in a way important to the excellence of your product. I think maybe you'd find some people who might have a hard time getting hired elsewhere doing good, inventive things here.

Sees No Politics Here

"You have an impressive absence of politics. In most other companies you

see complicated political maneuvering. Here your disagreements tend to be on the basis of technical problems, for example.

"I'd say you're well above average in your freedom to vary—to depart from conventional ideas. And you prize this asset highly.

"Not that freedom is always an easy situation. It may cause frustrations—yet it must be exciting . . . To have able people in regimented jobs **without** freedom, and have apathy set in—that is the far worse situation. In general, a person will become apathetic when he sees little chance to do anything different.

Pay with Confusion

"Yet at Tektronix you buy this freedom with confusion—and you do have confusion. And so you pay the price. Myself, I think it's probably a good bargain."

And then he warmed to his specialty, communications systems in an organization.

"I don't think you shine much here in effective communicating," he commented. "Maybe you're buying something in terms of free operations—but there are large areas of ignorance about what's going on someplace else in the company . . . I see no thought-out process to make the necessary information available. When a person needs to know information, there should be some way for him to get it."

(continued on next page)

Outside, Looking In

Lower echelons typically demand information, he said, and if they don't get it they'll assume it's being held back.

"A manager doesn't have the alternative not to respond to a question. There is no alternative. When he keeps silent, he's giving an answer. When you say nothing, you give the questioner permission to conjecture.

"The demand for information is not a function of how much a person knows, but I think he could operate better if he knew more.

"Employees want to know more about what the boss is thinking—or they're insecure about what's going on. Managers need the confidence and respect of their employees. You can make a bad decision from time to time and survive, but once you lose credibility in employees' eyes you're in trouble. It's a tough thing to get back, if—even once—you violate their trust."

Wife Has Same Problem

Some persons see communications problems as the result of largeness. Dr. Bavelas says there is no necessary correlation. Take the family—a small unit—as a typical example. What is the wife's common complaint? "My husband doesn't talk to me."

The solution to any organization's communications problems is not a matter of information **packaging**, but one of basic **communicativeness**, he said. It is true that the larger a system becomes, the more difficult its mechanical aspect.

In a company, a basic minimum of information is necessary. Without this first stage, an employee doesn't know enough to determine what else he needs to know.

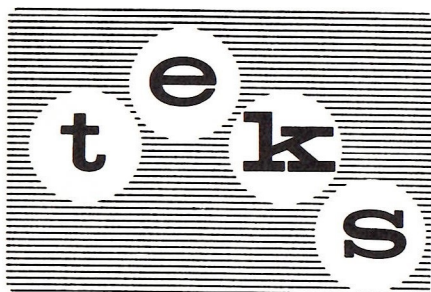
"How much first-stage information is available reflects in how fast an employee feels at home. It's surprising how easy it is to miss this point . . .

"I look on management as an information-processing and decision-making mechanism. An organizational system is like a nervous system; I'm interested not in what messages are transmitted but in what systems operate; in converting energy and intelligence into some product; in making the most effective use of human effort."

At Tek he saw that effort and energy operate in an atmosphere with a maximum of freedom and—maybe necessarily—a husky share of confusion.

"It's easy," he observed, "to draw up rules of operation if you have a lot of them. But if you want a minimum number of general rules, you must plan like mad and pick the right ones.

"Never make a virtue of confusion . . . You may only be kidding yourselves."



FRIENDS OF Treasurer (and veteran bachelor) Don Ellis, needed for years by his dry cynicism about freedom (bachelorhood) versus slavery (marriage), gave him rough treatment when he recently up and got hitched.

Among their stunts was rigging his office with all sorts of diapers and little stuff like that.

Here's Don, pondering the didies. Bet he'll think twice before getting married again.

TALK ABOUT specialists: Frank Corelli (Plastic Molding) recently sold a goat with this highly specific ad:

"For Sale: Pet milk goat."
Not Carnation. Not Borden's.
Pet.

ATTENTION, small women!
A job posting run not long ago by the Semiconductor Devices department included this hard-to-meet requirement:

" . . . Must work under microscope . . ."

Good way to catch a germ.

THIS DID happen:

An employee drove up to a Beaverton-area super service and ordered one quart of oil.

"Justa quarta oil?" blinked the super serviceman. "Yep," the driver said.

As it happened:

1. The car's hood latch was busted, requiring two hands and much jiggling to open.

2. The hood spring also was sprung, so the hood wouldn't stay up by itself.

The attendant jiggled the latch, muttered a bit, wiggled it some more.

Finally it opened, and he hurled the hood up.

Sprong! It rebounded, crashing down, scaring him.

He tried again. Fiddling, jiggling, he opened the hood and this time when it bounced back he propped it up with a hunk of wood.

He read the dip stick: Not a trace of oil. He gawked, jammed the stick in again, pulled it out, wiped it off. Still absolute zero.

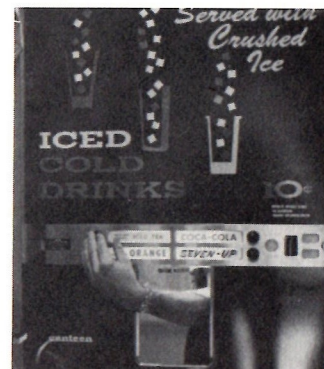
It was too much. He stalked over to the driver's window.

"Say, buddy," he demanded. "Am I on 'Candid Camera'?"

AUTOMATION is a worry word to some folks, who see visions of machines all over the place: Punching holes, sending messages, wiring circuits, serving soup and doing other people-things.

Some machines, like this soda pop vendor in the IO building — are pretty darn human. This one turns itself on and pours itself a drink.

Snack bar personnel have no explanation, except that it's probably thirsty.



DID YOU know Guernsey has its group representatives, just like we Yankees? It's so. Some items from their GR minutes have a British flavor:

Someone asks that chips be added to the menu. Another requests new trolleys for Unit Wiring. And they report a lunchtime problem of queuing up at the canteen.

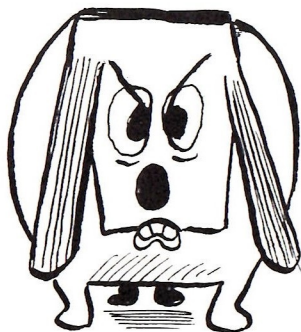
But some things ring a bell even here in Portland:

"The new time cards appear confusing and time-consuming. Can anything be done to simplify matters?"

The minutes go on to describe a minor crisis:

"The dog on Victoria avenue which has previously been known to chase vehicles has been causing trouble again . . ."

(The group, respecting the dog's dignity as an individual, voted not to report him to the police.)



SOME OTHER bits of Guernsey information:

There's one car (cars are kept in the car park) for every 3½ employees. Others drive bicycles (which are kept in the cycle shed) and motor scooters. Despite the dog on Victoria avenue.

AND HERE'S an eyebrow-raiser, from a recent IOC:

"To supplement the comments at your meeting . . . copies were mailed of all operating managers . . ."

And we're supposed to be getting rid of unnecessary duplication.

This calendar, from an anonymous source, may provide a solution one of Tektronix' continuing problems.

NEW CALENDAR FOR RUSH ORDERS

Everyone wants his order yesterday. With this calendar, customers can place their orders on the seventh and have them delivered on the third.

Most customers want their orders shipped Friday, so there are two Fridays in every week.

There are seven extra days at the end of the month to take care of shipments which must go before the first of the following month.

neg	fri	fri	thu	wed	tue	mon
8	7	6	5	4	3	2
16	15	14	13	12	11	9
23	22	21	20	19	18	17
31	30	29	28	27	26	24
38	37	36	35	34	33	32

No first-of-the month's bills to pay because there isn't any "first". We've omitted the "tenth" and "twenty-fifth" so you won't have to pay invoices in accordance with our terms.

There are no bothersome non-productive Saturdays or Sundays. In that way we can get week end rush orders out without the time and a half or double time overtime charges.

There's a new day each week called Negotiation day, on which requests for improved delivery can be reviewed and discussed once weekly.

"OPENING DAYS can be rough," writes Jeanne Hall of the Tek Seattle field office, "and ours was complicated by a broken teletype machine. Here is one message received from West LA:"

Still, it's the spirit that counts. Probably the message made the Seattleites feel real gxxd.

THPS ISHTZKTOVIX WLWP6698 VOOX WTEGNOOV TMHVOLTMPXZAMME, FRANCIS AND ROV
COMGRWTQLAOPOMSPOV QOUR MVENING BAY AND 3 WISH U VALLPINDS O SUVCESU.93V

Lump Settlement Not Automatic, RT Man Stresses

Tektronix employees who terminate with a fully-vested Retirement Trust account do **not** automatically receive a lump sum settlement, according to Emerson Hoogstraat, RT manager.

They may or may not receive a lump settlement, he said; in each instance, the six-man administrative committee must decide.

Settlements **have** been made in some cases. Other terminees, interpreting these instances as precedent, have worked themselves into financial binds, counting on a similar settlement to rescue them, he explained.

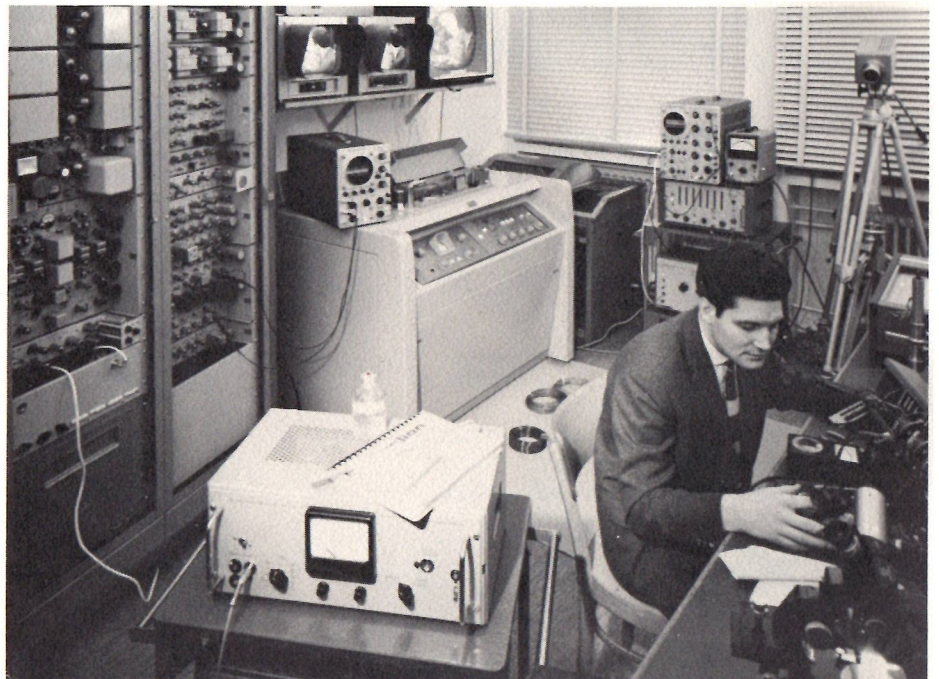
They're Mistaken

"They seem to believe that if they say they need the money, the committee will grant the settlement," Emerson commented.

It's well to bear in mind, Emerson emphasized, that the primary purpose of Retirement Trust profit sharing is to provide for retirement.



ADULT WESTERN? Not really. Bernard Stalp, with pistol, and Jim Buxton, pocketing real dollars, star in "Proper Handling of Cathode-Ray Tubes," a movie by Arlan Evensen of the Communications department's Films group. Bernard and Jim are members of CRT Evaluation.



TEKTRONIX 515A and 545A with a CA plug-in are integral parts of laboratory at Badische Anilin-& Soda Fabrik AG, German manufacturer of high-quality recording tape.

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