



Editor, Joe Floren; production coordinator, Willie Henning; graphic artist, Nancy Sageiser. Other contributors, this issue: Jane Martin, Becky Weber, Josef Oswald, Dick Koe.

## he came through where we worked . . .

History reports what was, not what should have been, and is thus in part a chronicle of tragedies and shame. And, often, it brings on a flurry of hindsight as painful as it is useless.

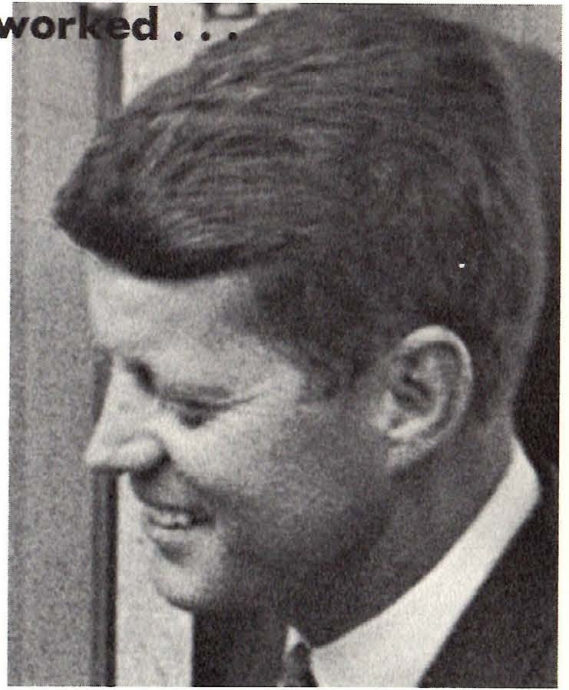
One of its great inequities is the suddenness—and sometimes the ease—with which small and twisted men can take into their own hands the law, the lives of others and, indeed, the fortunes of humankind,

Such men can cut down a president to what they wrongly suppose is less than their own size. By doing so, they can divert the course of history as surely as those millions chartered it who elected that president to office. For dim motives of their own, or too often for the real or imagined applause of others, such men can make themselves commit acts of horror.

It shouldn't have happened; some stunned Americans still say it *couldn't* have happened. But it did, and John F. Kennedy died in Dallas on a sunny November midday.

A world crying out for peace and leadership suffered a loss it could not afford. It needs more such men, not fewer. It will not replace John Kennedy, and it will be a more wretched world for that.

The deed was hideous, with moral implications both



harsh and far-reaching. It is almost sure to strengthen Americans' memories of their President, and their awareness of the enormous responsibility he bore.

Most important of all, it makes painfully evident once again an old, old lesson of history: That the abscess of hate, in time, erupts in the pus of violence.

\* \* \* \* \*

Still other memories, these of no historical significance, will remain with those who for a moment met and talked with him. These personal recollections, too, are bound to mean something more because of the grim drama that ended his life. Many will tell their children's children that he passed through where they worked, and that they shook his hand.

Tektronix had its brief encounter with candidate John Kennedy in May 1960. Photographs on this page reflect our response to the charm and the force of his personality.

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It is only conceit to pretend to discern (as analysts are fond of doing) that Americans feel this way, or that way, about the tragedy; for what each person feels must certainly be unique. A British commentator put it well: "It is a time for *private* thoughts." And a saddened nine-year-old wrote hers:

"Tears came into my eyes," she said. "He was the most important man I had ever heard of . . ." — J. F.





(Roads in Tektronix Industrial Park have been named after three outstanding scientists who have contributed much to physics and electronics: Robert A. Millikan, Dr. Knowlton and Karl Braun. This article will discuss some of Dr. Knowlton's contributions.)

During his 33 years at Portland's Reed college, Dr. Ansel A. Knowlton won nationwide recognition for his skill as a professor of physics. He was most widely known for three things: The quality of the students he trained; his textbook, which revolutionized college physics instruction, and a lifelong espousal of individual academic freedom.

Mr. Knowlton was born in 1875 in New Portland, Me. He graduated from Bates college, where he took general courses with an emphasis on classics. Interestingly, he took only one course in physics.

After graduation he heard Carleton college, Northfield, Minn., was looking for a science teacher and coach. He enjoyed sports, and he had always figured he would end up teaching either physics or chemistry. Thus he (1) coached track and (2) chose physics as a career. Later he had teaching jobs at Northwestern university and Armour Institute. He received his Ph.D. in physics from the University of Chicago in 1909.

That year he joined the faculty of the University of Utah. This association lasted six years. Then he and two other faculty members were fired, in an academic uproar that resulted in the first investigation by the Association of American University Professors of infringements of academic freedom. Dr. Knowlton was vindicated by the AAUP after its investigation. Twenty other faculty members quit in protest over the firings.

This was 1915, and Reed was looking for someone to replace Dr. Karl T. Compton, who later became president of MIT, as head of the Physics department. Dr. Knowlton was the right man. His thirty-three years at Reed offer proof.

Through this time, his approach to physics was as independent as was his approach to academic freedoms. He believed in curiosity and, what was even more radical for his time, a humanistic approach to the subject. He felt physics was a part of life, and he believed it important to know the famous individuals of physics as well as the knowledge they developed. He taught that physics wasn't something by itself, but a part of human endeavor, a study for people, not a study of things.

Once, describing his attempt to explain to a college president his notions about teaching physics, Dr. Knowlton said:

"Even then I had seen too many cases in which the content of a course in General Physics at its completion must have seemed to the student somewhat like the contents of an art gallery or museum; that is, like an orderly array of pictures and artifacts all completed, framed and hung upon the wall or stored in cases safely locked against meddling hands.

"My idea, which I tried to explain to this president, was that such a course ought to appear as a series of glimpses into studios and workshops in which artists had worked, and were still working, upon objects of interest which always remained in some respects unfinished . . .

Small wonder that the good man escaped as quickly and tactfully as possible, trailing behind an unfinished ' . . . and if you should change your mind . . . ' The imagined disorder of such a course must have shocked him beyond expression."

Through his years at Reed "the imagined disorder" of his approach to physics, as he early in his career described it, may have shocked some students. However, it appears to have shocked them into great accomplishments.

The young men Dr. Knowlton turned out from his Reed laboratories began distinguishing themselves almost immediately. A later study brought to light the true scope of his teaching achievements. This study of the origins of men listed in "American Men of Science" (a "Who's Who" of science) showed that in proportion to the size of its student body Reed had placed almost twice as many physicists on the list as any other American college or university. On a straight basis, Reed had contributed as many names as Columbia, Johns Hopkins and Princeton, and more than Stanford, Illinois and Pennsylvania!

A later study tabulated the undergraduate origins of all physicists granted Ph. D.s between 1936 and 1945. Reed again found itself with the big schools. Yale, Ohio State and the University of Washington were barely ahead of it and Purdue, Dartmouth and UCLA behind it.

In 1947 he received an award from Research corporation for outstanding teaching and in 1952 the Hans Christian Oersted award from the American Association of Physics Teachers, the highest award given teachers of physics.

His text "Physics for College Students," published in 1928, approached physics from the humanistic rather than a purely technical view. This text and later editions were widely used.

Atomic energy was one of Dr. Knowlton's special fields. Some of his students worked on producing the first atom bomb, or on research that led to the bomb.

Dr. Knowlton, in work for United Airlines, was asked to solve the problems of blotted-out radio beams on planes. He found static electricity was causing the blotting, and that placing a wire and resistor trailing off the wing of the plane would bleed off the static electricity.

His hobby was golf. In the late 1930s he was a runner-up in the Oregon senior men's golf tournament.

Dr. Knowlton remained at Reed until 1948. Although 72, he taught two more years at Bennington college, Vt. He returned to the Portland area and made his home with his daughter, Mrs. Kenneth Johnson of Beaverton, now registrar at Reed. He died in 1957.

As the Portland Oregonian said: Over the years at Reed, Knowlton became as much a part of the campus as the buildings. To physicists in eastern college graduate schools, who watched in amazement the steady file of top-flight young scientists who came to them from a little school in the Northwest, A. A. Knowlton was Reed college.





# WALL STREET USA

(Material for this article was taken from various books and booklets obtained from local securities investment houses. One booklet was particularly helpful: "Understanding The New York Stock Exchange.")

Picture a floor about two-thirds the size of a football field. Around it are many, many telephone stations. In it hundreds of people are rushing about. Throughout the room are 18 horseshoe-shaped trading posts, manned by over 350 men. From the gallery above, an uninformed observer sees a wild mass of confusion.

But it's one of the most organized masses of confusion known. This is the New York Stock Exchange on Wall street in New York City.

The telephones connect almost 700 exchange members — all brokers — with their offices throughout the United States.



The 350 men manning the 18 trading posts are specialists in certain stocks.

Wall street, now the financial center of the world, once was the political capital of the United States. Here the New York chamber of commerce pressed the fight against the Stamp Act and against the tax on tea. Here George Washington took the oath of office; here the first congress gathered; here the executive offices were organized; here, too, the Bill of Rights was adopted.

On Wall street in 1789-1790, Congress authorized an issue of \$80 million in stock to help pay for the Revolutionary War. There was a scattered market for this stock, as well as for shares in banks and insurance companies then springing up. Trading—carried on in coffee houses, auction rooms and offices—was mostly unorganized, and people were reluctant to invest because they had no assurance they could sell their securities when they wanted to. There were no sure markets.

In May 1792, a group of 24 merchants and auctioneers met to do something about this situation. They decided to meet daily at regular hours to buy and sell securities under an old buttonwood tree on Wall street only a few blocks from the present site of the Stock Exchange.

These 24 men were the original members of the exchange. They handled the public's buy and sell orders for new government stock, as well as for shares of insurance companies, Hamilton's First United States Bank, the Bank of North America and the Bank of New York.

In 1793 the Tontine coffee house was completed on Wall street, and the brokers moved indoors.

Soon after the turn of the century the brokers, crowded in the coffee house, moved to a building on the site of what is now 40 Wall street. Greater activity brought the need for a more formal organization. On March 8, 1817 the first constitution was adopted.

It provided, among other things, that the president was to call out the names of stocks. As he called each stock's name, transactions in that stock would be made, somewhat like an auction. This "call market" was the standard procedure for 50 years. The president also was empowered to fix commissions and set fines for violation of procedure.

After changing locations a dozen times or so, the board settled in 1863 in the present site, at Broad and Wall streets, which contains most of today's trading floor.

Other historic dates are:

1863, the name "New York Stock Exchange" was adopted.

1867, the first stock tickers (devices which record each transaction on paper tape) were installed.

1868, memberships were made saleable. (That is, to obtain a membership a firm had to buy it from an existing member; thus the number of members became fixed.)

1871, the call market gave way to a continuous market. (No more calls of separate stock names).

1879, the first telephones were installed.

1910, the exchange discontinued unlisted trading. (Previously a stock not listed with the exchange could be traded, but the company had to comply with exchange standards).

1922, the questionnaire system for regular examination of the member firms' financial condition was begun.

1933, independent audits of financial statements were first required of listed companies.

1938, a sweeping reorganization of the exchange called for a paid president.

Probably the exchange's most important function is allowing an individual to put his capital to work whenever he chooses. One great advantage of owning corporate securities is that they are "liquid"—they can be sold on a moment's notice and converted to cash. Capital is free to move; the individual is entitled to profits when a venture succeeds, ready to stand the losses when it fails.

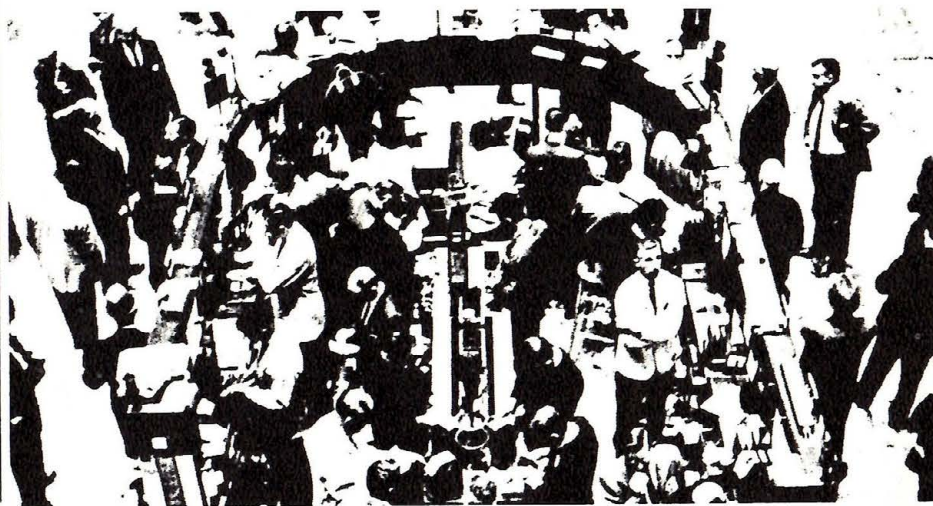
How important are the companies whose stock is listed on the exchange? Here's one way to look at it: These companies (more than 1100) earn almost two-thirds of all net profits after taxes reported by US companies! They pay about 60 per cent of all dividends. And they provide 14½ million jobs.

Until 1869, admission to the exchange was highly informal: A member merely proposed that a certain company's issue be traded. If a majority of members consented, the company was eligible.

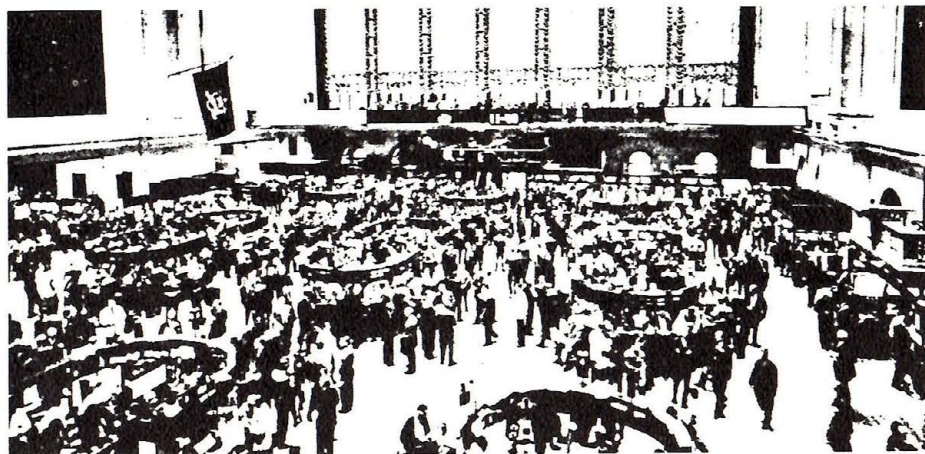
Expanding business brought a need for more regulations of companies whose stock was traded: Frequent earnings reports; full and prompt disclosure of changes in property or business, and maintenance of security transfer offices.

The philosophy behind the exchange's listing requirement is simply this: The investor or trader who owns, buys or plans to purchase listed securities is entitled to information about the corpora-

#### THE INSIDE OF A TRADING POST



#### THE VAST TRADING FLOOR, ALMOST AS LARGE AS A FOOTBALL FIELD

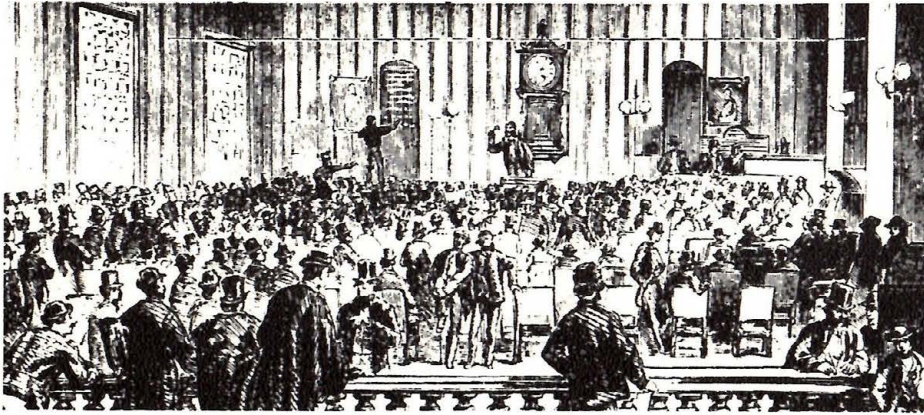


tion which will help him make intelligent investment decisions.

Corporate management has found many benefits other than prestige: The broader market for their securities obtained on the exchange, a greater number of share owners, and appearances of the company's name in financial pages and stock tables of the nation's press.

To qualify for listing on the exchange, a company must have substantial assets and earning power. The stock should have sufficient geographical distribution to assure that an "adequate" market for its securities exists. The company should have earning power of over \$1 million annually—after all charges and taxes. It should have at least 1500 round-lot stockholders (round lot: 100 shares), together holding 500,000 or more shares. Outstanding common stock should have a minimum total value of \$10 million.





THE LIST OF STOCKS IS CALLED AT A SESSION OF THE EXCHANGE IN 1860

If a company wants to list additional shares of an issue already listed, it must get the exchange's approval.

About 95 per cent of the companies listed publish financial statements every three months. Five per cent publish every six months.

The standard agreement calls for distribution to stockholders of the company's annual report, with certified financial statements, at least 15 days before the annual stockholders' meeting.

The exchange feels strongly that the right for shareholders to vote in corporate matters is fundamental; it has refused to list nonvoting common stock since 1926.

Membership in the exchange totals 1366. Maximum membership was set at 1375, but nine have been retired.

An exchange member may be a general partner, or holder of voting stock, in one of the brokerage concerns which, by his exchange membership, is then known as a member firm or corporation.

About half the members are partners or officers in organizations doing business with the public—so-called "commission houses". These members execute customers' orders to buy or sell, and their firms receive the commissions on the transactions. They meet the public and take orders to sell or buy any listed stocks.

About one-fourth of the members are specialists—so called because they specialize in "making a market" for one or more of the stocks.

A specialist's business is concentrated on a particular group of stocks at one trading post (say, General Motors and two or three other companies). Thus he can also act for other brokers, who cannot remain at one post until prices specified by their customers are reached. The specialist must assume full responsibility for all orders turned over to him. Part of the commission the customer pays his own broker goes to the specialist when the broker uses his services.

Some members are "odd-lot dealers." They serve investors who buy or sell a few shares at a time, rather than in the conventional 100-share "round lot." The odd-lot member acts as a dealer, not a broker. He actually **buys** odd lots of stock from, or **sells** odd lots of stock to, other members who do the public business. (In most stocks, an odd lot is any number of shares from 1 to 99.)

Then there are "floor brokers", who assist the commission-house brokers.

All members, whatever their function,

must "own a seat" on the exchange, a term that traces back to early years when brokers did remain seated while the president called the list of securities. However, now people are constantly moving. To a watcher, the movement may seem aimless, but each move is made for a reason. Each broker on the floor executes his customers' orders as rapidly as possible—and wears out much shoe leather in the process.

The price of any of the 1366 exchange memberships (or "seats") is determined by how much a candidate will pay and the amount the owner of a membership will accept. The board of governors maintains complete control over admission of new members. The price of memberships since 1958 has ranged from \$69,000 to \$225,000. Initiation fee is \$7500 and annual dues \$1500. (The exchange doesn't try to make a profit. It is a voluntary association of brokers.)

Regulations governing the conduct of members are set by the board of governors, which is elected by members. The board has broad policy-making and disciplinary powers.

The board of governors represents all sections of the country. Three representatives of the public, who have no direct connection with the securities business, bring a non-professional viewpoint to the board's deliberations. The chairman, elected annually, must be a member of the exchange. The president is selected by the board and may not be a member of the exchange, nor a partner in a member organization.

Within the complex system of regulations created by 169 years of experience, how does a transaction take place on the floor of the New York Stock Exchange?

#### What To Consider

Here are the four main considerations to keep in mind:

1. When you buy stock, you buy from another person—somewhere.
2. When you sell, you sell to another person—somewhere.
3. The stock exchange itself neither buys nor sells, nor does it set prices.
4. The exchange merely provides the marketplace.

Let's say John Doe of Baltimore has sold his summer home for \$5000. After talking things over with a stock exchange member firm, he decides to buy, with that sum, common shares in General Motors. He asks the firm's Baltimore representative to find out what GM shares are selling for.

Over a wire to his New York office, the representative asks for a quote. A clerk in the firm's New York office dials the quotation department and hears the quote over the automatic tape announcer.

Usually-up-to-the-minute quotations on all listed securities are received by the department over direct wires from each trading post on the floor. Each stock is assigned a particular location at one of the 18 posts. All bids and offers in that stock must take place at that location.

The clerk at the New York office immediately reports to Baltimore that GM is quoted "\$55 to a quarter". This means that at the moment the highest bid to buy is \$55 a share and the lowest offer to sell is \$55¼. Mr. Doe learns 100 shares will cost roughly \$5500, plus a commission of \$44.50.

Doe says "go ahead". About this time some other person somewhere wants to sell 100 shares. He finds the selling price is \$55¼.

Here's how the two brokers might figure: The one, "I can't buy at 55"; the other, "I can't sell at 55¼".

So the compromise is 55⅜, and a sale is made. Mr. Doe buys at 55⅜. The whole transaction takes only a matter of minutes.

#### Odd Lot Sales Differ

Suppose Mr. Doe had only \$1000 to invest. Fewer than 100 shares of GM could be bought as an odd lot. These orders are filled by members who act as dealers in odd lots on the trading floor. The floor clerk would have sent the order to an odd-lot dealer at the GM trading post. The dealer would fill the order at a price based on the last round-lot sale. Assume it was 55⅜; then the odd-lot dealer would sell at 55⅜. The additional ¼ is known as **differential**. (On stocks selling for less than \$40, it is ⅛ per share.)

Commissions charged by stock exchange members are among the lowest for transfer of any property—an average of about one per cent. Commissions are figured on the following basis for each 100 shares:

1. Purchase or sale between \$100 and \$399.99, 2 per cent plus \$3. A minimum of \$6.
2. \$400 to \$2,399.99, 1 per cent plus \$7.
3. \$2400 to \$4999.99, ½ per cent plus \$19.
4. \$5000 or more, 1/10 per cent plus \$39—provided the amount does not exceed \$75 per 100 shares.

On odd lots the commission is \$2 lower per transaction, with a minimum of \$6 for transactions of more than \$100.

The federal government collects a transfer tax of 4 cents per \$100 of the actual value of shares sold or transferred. The minimum tax per transaction is 4 cents. The maximum tax per share is 8 cents, on stocks selling at \$200 or more.

Briefly, this is the New York Stock Exchange. Now, what makes a successful investor? Probably if all the advice were summed up it would simply be: Buy stocks low and sell them high.

This is oversimplified, but there is one significant word: **Patience**. Don't be fidgety about day-to-day fluctuations in stock value. The country will continue to grow, and good companies will share that growth.





## also growing: **Electrochemical**



The Electrochemical department moved operations this month to its newly completed building, located on Karl Braun Drive between Facilities and CRT.

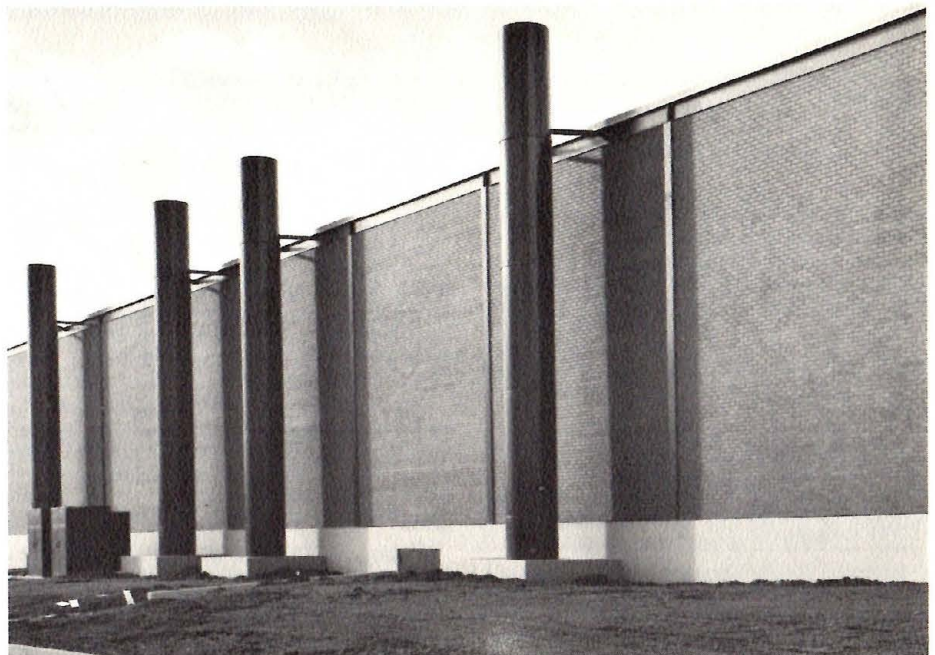
The building provides approximately 35,000 square feet of usable floor space. The chemical process area floor is a modular design concept to make rearrangement of plating tanks and process units easy.

Six designs were considered for the building, each evaluated from functional and monetary aspects. The present design was accepted as the one most adaptable to our present and future electrochemical needs, and giving us the greatest useful value for our dollars invested.

The building is a two-story structure. Offices and process labs occupy the second floor. The ground floor section houses image, paint, mechanical and chemical processing areas.

Ventilation air for the chemical processing area is introduced through ducts in the sloped, laminated-beam-supported ceiling. It is exhausted downward through ducts adjacent to process tanks, transported horizontally below the floor, then released into the atmosphere through tall exhaust stacks on the southeast outer side of the building. This ventilation system prevents building up harmful concentrations of fumes.

Other areas within the building are



WASTE CHEMICAL DISPOSAL PLANT pumps neutralized liquids into three lagoons; liquids stand for about two days before release into creek (top). Electrochem employees prepare panels for automatic anodizing machine, first such machine on the West Coast (left). Exhaust stacks release fumes into atmosphere at 60 mph velocity (right).



# Electrochemical...



PANELS ARE SPOTTED to cover defects in the photo resist coating; from here they go to detail etching area (left). Control panel for automatic anodizing machine gets final check before production starts (right).



equipped with standard air-conditioning equipment.

## Waste Chemicals Treated

Waste chemicals are transported through underground pipes to the chemical disposal plant, where they are treated to neutralize their acid or alkaline content. After treatment they are released into open-air lagoons next to the treatment plant. The harmless fluid stands in the lagoons for approximately two days; the clear water then is dumped into Beaver creek, which flows through Tektronix property.

Process equipment in the new building was designed and constructed by the Electrochemical Production Support group, with assistance from other areas of the company.

Because Tek's electrochemical processes are so diversified, it was not possible to design the structure so a single contractor could be awarded the construction contract. Six Portland-area prime contractors were used. Ross B. Hammond Co. was general contractor for actual building construction. Two electrical contractors installed wiring: Jaggar-Sroufe Co. for the building and Tice Electric Co.

for special processes. Three mechanical contractors were required: Temp-Control Corp. installed general mechanical equipment; Lynch Co., process ducts; and A. J. Zinda Co., process plumbing.

Knowledgeable people in the plating industry have evaluated the new electrochemical operation as the largest specialized precision electrochemical unit in the western US. The operation is especially recognized for the close tolerances on specifications, the high repeatability of processes and the low reject rate.

Electrochemistry at Tektronix includes such processes as electroplating, photo etching, photo anodizing, photo lithography and electrochemical etching. It requires specialized knowledge in mechanical, electrical and chemical fields.

Photo etching is a photochemical process by which a pattern is etched into metal. Photo anodizing incorporates techniques similar to photo etching, but the pattern is imposed on the base metal through a dye process. Electroplating provides functional, decorative or corrosion-resistant surfaces by electronically depositing single or multiple layers on a base material. Photo lithography encompasses the photo-mechanical aspects

of all photochemical work, including preparing negative and positive filmwork, preparation of base materials, coating and developing light sensitive materials. All these processes are used in etched-circuit, chemical milling and selective anodizing preparation.

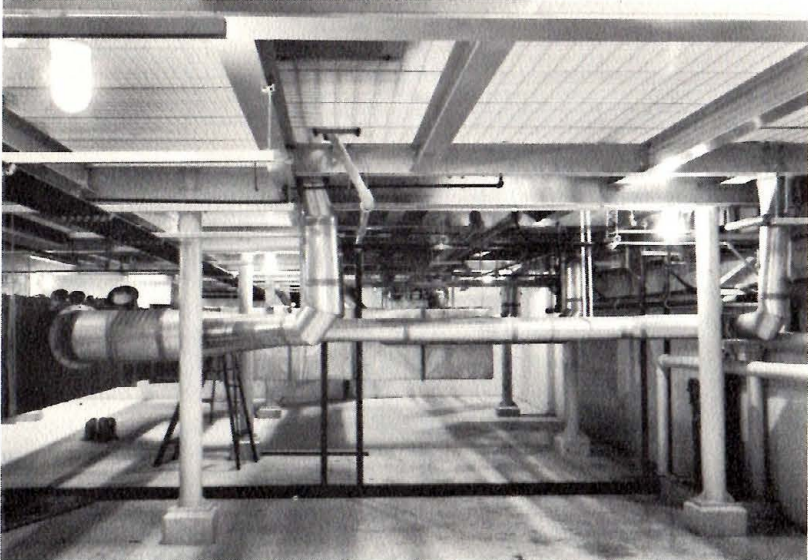
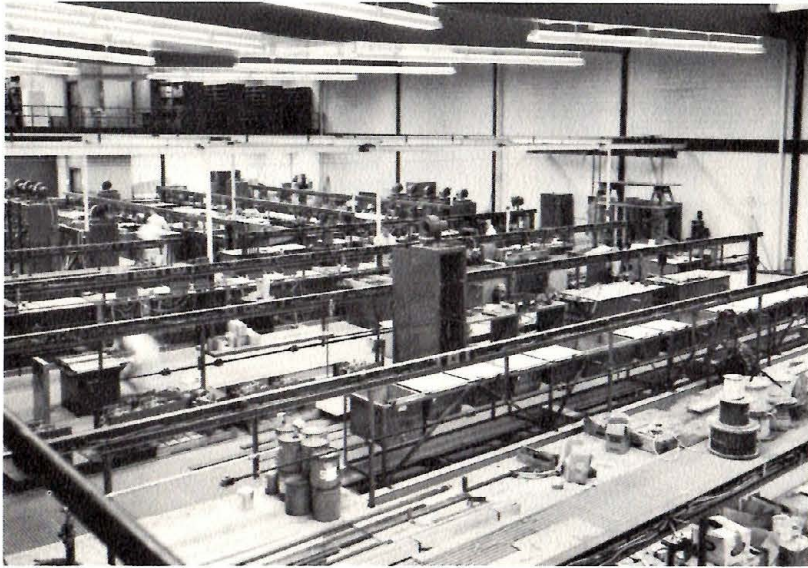
## Gold, Silver, Platinum used

The Electrochemical department uses these techniques in its continuing effort to develop and maintain specialized processes specifically tailored for the proprietary components used in Tektronix scopes. They use not only ordinary metals—brass, aluminum, copper—but also such precious metals as gold, silver, rhodium and platinum in electrochemical production.

Bill Parker, Electrochemical department manager, came to Tektronix in August 1959, from Goodyear Aircraft in Phoenix, where he was electronic production manager.

Although he was initially in Tek's Engineering department, he was called on to do special-order plating for other areas of the company because of his plating and electrochemical background. This





CHEMICAL PROCESSING FLOOR of new building holds all plating and anodizing tanks (upper left). Network of special resin-treated plumbing and ventilation pipes interlace under the chemical process area grids (lower left). Machine operator reproduces 24 panels at one time, using pantograph (right).

special-order work grew until it was consuming most of his time.

In July 1960, Tektronix decided to form an electrochemical unit, and Bill transferred to F&M to organize that department.

The Panel unit, which has supplied scope and plug-in panels since 1952, became part of Electrochem in 1962. Last month the unit moved into the Electrochem building and its operations merged with other Electrochemical activities.

#### Four Units In Electrochem

The department includes four major units: Production, Production Support, Quality Control and Process Development & Control. It has about 100 employees.

The Production unit is headed by Chuck Lusardi. All electrochemical production, including mechanical, chemical and image processing, is done by this group.

Production Support (Jack Peasley, manager) designs and builds most of the equipment and tools for electrochemical processes. They also maintain all process equipment in the building.

Quality Control assures constant qual-

ity by a continuous monitoring system of all parts processed through Electrochem. Dwain Hall is manager.

Ray Davis heads Process Development & Control. His group must stay abreast of the art, thereby providing continuous tools for incorporation by design engineers into our new instrumentation. They provide engineering, prototype and pilot quantities of new electrochemical processes to agencies throughout Tektronix. They initiate and formalize all electrochem processes required to support new instrument and/or component releases. The second half of their job is to provide the vital function of chemical process control for some 100 different processes in these facilities.

#### Why Build?

Why did we build this building?

Bill listed several reasons. Perhaps the foremost was the prohibitive maintenance cost on the old facilities: At the Sunset plant, the Sellwood-area Panel unit, and the Cedar Hills shopping center rented facilities. Acid processes used in electrochemistry were particularly destructive to buildings and equipment not specifically designed to withstand their effect.

Electrochemical requirements at Tektronix are increasing rapidly, making necessary more space and more equipment than we had.

#### Electrochemical Production To Increase

The specialized electrochemical processes employed at Tektronix are not available from outside vendors; some are proprietary processes that we do not wish to divulge to other concerns. Processes available outside the company were expensive and often unsatisfactory.

Construction of the new building, in which all electrochemical processes can be consolidated, was the most economical way to satisfy Tektronix' production requirements. It has the added advantage of allowing us to gain fast reaction time, to maintain stocks of electrochemical finished component inventories and to react to new production and/or modification requirements.

Use of electrochemistry in Tektronix oscilloscope production will increase as the art advances, Bill said. We have just scratched the surface of providing components in electronic manufacturing through electrochemistry.



# RECREATI



Acreage efficiently planned for a wide range of outdoor activities for Tektronix employees and families, plus a multipurpose recreation building, complete with meeting rooms, swimming pool, lockers, coffee shop and equipment storage areas, all located on a convenient site near Tektronix . . . . .

To some employees this idea may seem impractical—or downright impossible. To others it sounds like an old idea which has been tossed around with very little push behind it. But to Tek's Inter-Club Recreation Council (ICRC), the main coordinating body for employee recreational activity, the idea is very much alive—and very possible. They believe, given a few years the idea could become a reality.

An indication of renewed interest came in November when ICRC passed a motion to raise enough money among its member groups to investigate possibilities of starting a recreation area and a multi-use building.

The investigation will be aided by membership in the National Industrial Recreation Association (NIRA), which promotes organized recreation among industrial firms. With a full-time administrative staff, NIRA keeps its member organizations posted on developments in employee recreation, with emphasis on recreational areas and facilities.

NIRA issues a regular publication, conducts idea clinics, suggests programs and holds tournaments in bowling, rifle and pistol shooting and contests in photography.

Numerous industrial firms with strong recreational programs are members; from them ICRC hopes to gain new insights into possibilities of a recreational site and multi-purpose center. These firms include Aerojet, General Motors, Lockheed, Minnesota Mining & Manufacturing, State Farm Insurance and, more locally, Boeing and Hyster.

Financing a Tektronix recreational facility would be employees themselves. For example, membership dues in NIRA would come from funds collected by Tektronix clubs and activity organizations. Acquiring land and constructing a building would also be a joint activity of the club organizations and interested employees.

The proposed recreational facility, Tek clubs and sports groups and the ICRC all are parts of our recreation program, which has existed ever since we hired our first employees 16 years ago. The latest company club roster lists 17 active groups, from archery to theater and from ice hockey to radio. This does not include outside clubs to which employees belong.

These clubs range in size from 15 to 500, meet frequently or infrequently, elect a full or partial slate of officers and send representatives to the ICRC if they see fit. At present, sports clubs seem to attract greatest following, with bowling a standout.

Coordinating these 17 clubs and groups is the ICRC, which (1) assists and coordinates Tektronix employees' recreational activities when requested; (2) helps employees organize new groups; (3) takes charge of Tektronix recreational equipment; and (4) maintains complete, up-to-date listing of active and inactive clubs, together with officers and telephone and delivery station contacts.

The council is strictly voluntary and has no official company status, but has a contact with Employee Relations which maintains a list of clubs and contacts and advises ICRC and individual clubs. Dick Falk of Employee Relations is the present contact person.

As stated in the ICRC policy adopted last March, each chartered employee club may designate a member as its ICRC representative. From these reps are elected the council officers. The 1963-64 officers are Duane Peck (Bridge Club), president; Roy Slack (Tekaqua), vice-president; and Frank Arena (Softball), secretary-treasurer. ICRC meets the second Wednesday of each month in the Metals building conference room during the lunch break.

ICRC was formed in October 1962, replacing the old Tektronix Recreation committee, composed of members at large elected by a plant-wide vote and later by the committee itself. By having a council of representative activities, each club organization now has an opportunity to involve itself directly in planning activities, discussing and solving problems and helping new clubs form.

The council's formation was in line with the new recreation policy which the company adopted last year. It states that (1) employees should feel free to form and join Tek clubs; (2) company funds should be spent only on programs that benefit all employees (which is in keeping with our profit-sharing policy); (3) the company should perform only those services in a recreation program which are impractical for employees or clubs to perform, and which neither compete with local businessmen nor favor one at the expense of the others.

Elaborating on the last statement: The company will provide meeting rooms, printing services and legal and financial advisement if desired by any Tektronix club, and give guidance on the acceptable use of the company name as part of the club name. The policy also spells out the





TEKAQUA

duties and purpose of the ICRC, and procedures for each club and its members to follow.

The policy in effect eliminated all financial assistance from the company for employee recreational activities. The decision, made by the board of directors, resulted from a general feeling that financial benefits were being channeled to only a handful of employees. The change meant the end of any company-sponsored athletic team (such as the recent baseball and football entries in Portland-area semi-pro leagues).

However, the company will continue to provide non-monetary assistance, such as free publicity of events through posters and publications, staff assistance on legal and financial matters and free space in the plant for meetings. A recent example of company assistance was free information and advice on picnic sites to clubs and groups holding summer picnics. This information was available through Dick Falk's office in Employee Relations.

The new policy has stimulated greater interest by all Tek clubs. Interest seems

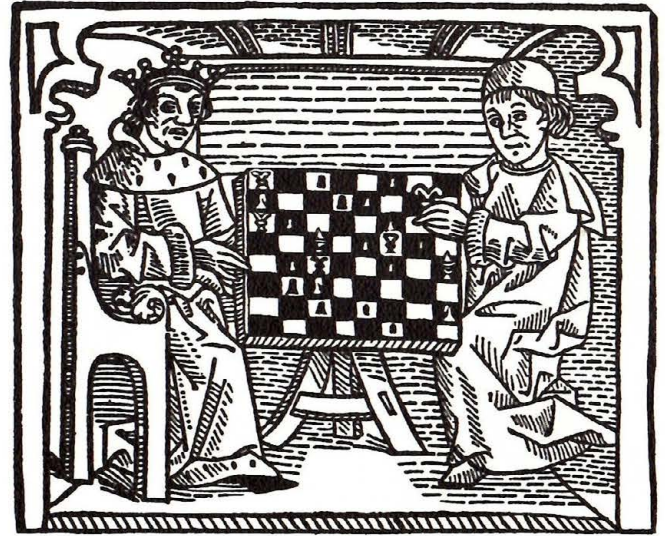


FLYING

higher than ever and clubs are initiating projects and programs by themselves.

The ICRC and the company recreation policy followed a comprehensive study of Tek's recreation program—in July 1961—by a special advisory group composed of Jack Cassidy, former Domestic Marketing manager; Tom Sloan, Employee Relations manager; Marge Guthrie, Engineering; John Taylor, Plant 1 manager and Rod Peloquin, Payroll.

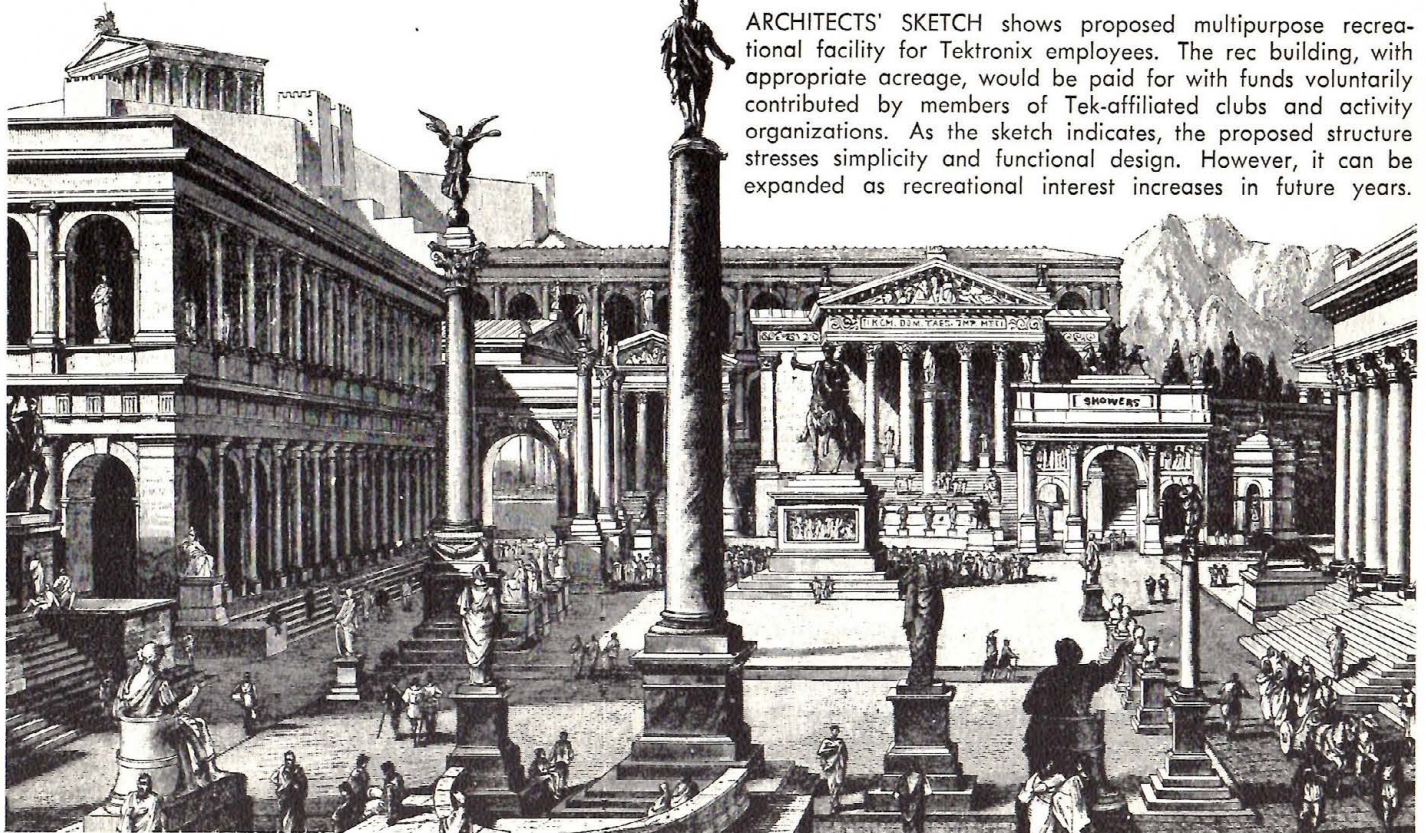
After the study, a 15-page written report was submitted with recommendations on policy and procedures, many of which were adopted in the recreation policy and formation of the ICRC.



CHESS

The report also included an interesting recap of Tek's recreational program since April 1956. At this time an exchange between the Personnel committee and Tek's Management committee (both no longer exist) brought approval for a person or group "to act as liaison between various recreation groups at Tek and to coordinate plantwide picnics, dances and other activities."

As a result, a seven-man Recreation committee was formed in April 1957 from a list of volunteers elected by a plant-wide vote. The first committee included Bob Guthrie, CRT Manufacturing manager; Bill Barnes, Medical Instrument Design; Evelyn Meyer, Plant 2 QC; and Clair Kidd, Betty Whiting, Leanne Garfield and Paula Klahn, former Tek's. Until its dissolution in 1962, the



ARCHITECTS' SKETCH shows proposed multipurpose recreational facility for Tektronix employees. The rec building, with appropriate acreage, would be paid for with funds voluntarily contributed by members of Tek-affiliated clubs and activity organizations. As the sketch indicates, the proposed structure stresses simplicity and functional design. However, it can be expanded as recreational interest increases in future years.





Recreation committee had 52 members coordinating the annual company-wide picnic and dances, club activities and budget allocations for employee recreation.

Probably the committee's biggest task during its five-year existence was coordinating company picnics, which annually drew thousands of employees and their families to Pat's Acres, Jantzen Beach or Avalon Park. Every ingredient for a successful picnic, from games and prizes to entertainment and finances, was planned by the committee.

The last company picnic, held August 1962 at Jantzen Beach, attracted 10,500 persons including 2300 kids. The fun-filled day had a talent show, softball contests, gate prizes, boat drawing, midget auto races, dances, bingo and children's games. Local radio and TV personalities were also present.

Another notable program was Tek's all-company Christmas holiday dance at Portland's Memorial Coliseum in 1960, which featured an eight-piece orchestra, floor show with chorus line, door prizes and refreshments.

### Baseball Team Tourney Contender

Then there were the baseball and football teams in the local leagues. During its existence, the baseball club, loaded with employees who were ex-college greats, was always a contender in play-off tournaments.

Tek's recreation program has come a long way; its continued growth and interest seem to parallel the rest of the company's activities. Greatest indications of growth and interest are the proposed membership in the NIRA and investigations in acquiring land and buildings, all on the heels of a newly-formed recreation policy and the ICRC.

And with this growth comes the full endorsement of the company, which announced in its recreation policy that:

"Tektronix believes wholesome recreation benefits its employees, their families and the community. For this reason, it approves of employee participation in recreational activities, as club or team members or as spectators."

# TEK NEWSREEL

(A summary of some of the major recent happenings on the Tek scene)

Jack Murdock, chairman of the board, was one of the two Oregon businessmen named director-at-large of National Association of Manufacturers at the NAM's annual Congress of American Industry, held in early December.

The other Oregonian named to that position was Robert C. Warren, president of Cascade Manufacturing Co., Portland.

President Howard Vollum was named to a four-year term on the board of trustees of Western Electronic Education Fund. Fund trustees administer scholarship grants to western colleges. The fund is an outgrowth of a program started in 1952 by Western Electronic Manufacturers association.

Special stock-education classes were held for 275 Tekes and spouses in November and early December. Arranged by Education & Training, the classes featured discussions by representatives of Portland brokerage firms.

Tektronix, Inc., was listed January 10 on the New York Stock Exchange. It was assigned ticker symbol TEK.

President Howard Vollum bought the first 100 shares at a listing ceremony with Keith Funston, exchange president, to mark the start of trading.

Listed on the exchange were 8,272,700 shares, of which 8,072,000 are outstanding, held by over 10,000 shareholders. Listing on the Pacific Coast Exchange was effective the same date.

The first public offering of Tektronix shares was made in September 1963. For the first 25 weeks of the current fiscal year (May 26 through November 16), the company reported a net income of \$2.9 million on sales of \$35.2 million.

With its listing on the exchange, Tektronix joins over 1150 corporations with aggregate listed shares of 7.3 billion.

Tektronix again was Washington county's largest taxpayer, paying a bill of \$639,279. The tax compared with \$594,731 in 1962 and 345,923 the year before.

Product design and development activity was reorganized November 1 under the direction of Bill Polits, Engineering manager.

The group will carry on activities which were conducted in the former Research, Design Engineering and Future Products divisions and the Cathode-Ray Tube Engineering department.

Engineering's five departments, and their managers, are:

Instrument Engineering, Jack Rogers; Advanced Circuitry, John Kobbe; Display Device Development, Norm Winningstad; Electron Physics Research, Jean Delord, and Preproduction Engineering, Lang Hedrick.

Don Alvey, International Marketing manager, and Ladd Goodman, International coordinator, spent three weeks in South America in November, investigating the market potential there.

Keith Williams, Domestic Marketing manager, announced that Tek field operations after February 10 will be carried on from eight region offices, each headed by a region sales manager. Our previous field marketing setup, with three regions comprising 13 districts, is to be discontinued.

Each region bears the name of the city in which the region office is located. These are the regions, sales managers and assistant managers:

*Atlanta*—Chuck Bouffiu, RSM; Frank Elardo, A.M.

*Chicago*—Ralph Ebert, Don Clifford.

*Dallas*—Gordon Allison, Tom Evans.

*Long Island*—Ted Brandt, Dan Guy.

*Orange*—Ed Bauder, Bill Carter.

*Palo Alto*—Bill Ewin, Bill Ward.

*Philadelphia*—Dick Herdman, Ed Vaughan

*Syracuse*—Bill Kladke, Lew Loebe.

Eb Von Clemm, former Washington, D.C. district manager, will transfer after the first of the year to Montreal to assume responsibility for Tektronix Canada Ltd. operations.

An anniversary worth noticing went by almost unnoticed December 7.

On that date Tektronix Retirement Trust was 10 years old. It was on the seventh of December 1953, that the trust agreement was signed and Tektronix, Inc. made a token contribution to US National Bank as trustee.

Construction—and plans for more construction—continued in our industrial park. The Electrochemical building was occupied in December (see feature story, this issue), and the chemical storage building went into operation.

Two other buildings are in the design or planning stages, and design of still two others (Employment and Services buildings) was begun but since has been temporarily halted.

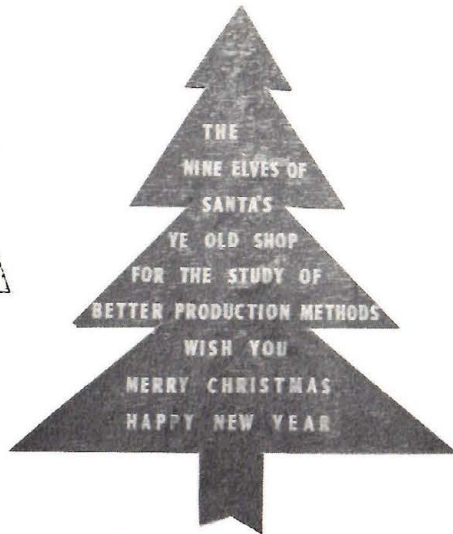
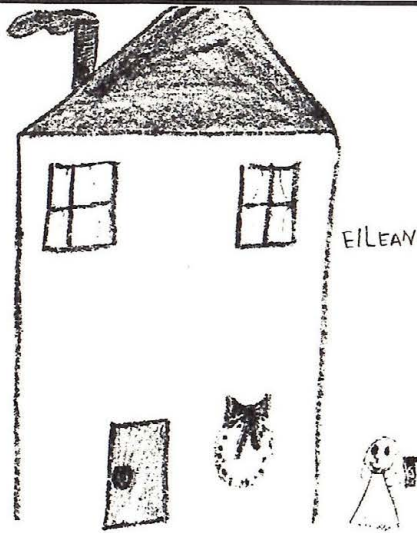
The 220,000-square-foot Technical Center, now in preliminary design stages at architect Wolff & Zimmer, will contain engineering, development and research functions in its air-conditioned three stories and basement. It will be built toward the west end of the industrial park, adjoining the CRT building.

The center is planned for occupancy in late 1965. Ross B. Hammond is contractor.

An 18,000-square-foot Maintenance building is planned for construction just east of the present Facilities building. It will house carpenter and maintenance shops and grounds maintenance groups (30 to 40 people in all), and contain space for material stores.

Construction is expected to begin in January, and completion to be in April. Ray Cone (Facilities) is architect.





**Teks (and their kids)**  
 said "Merry Christmas" in many ways:



PERSONNEL MANAGER Adri Leewis of our Heerenveen plant played Saint Nicholas for his home town, Beetsterswaag.



ANONYMOUS ARTIST expressed his feelings about the company.



P.C. Knowles



colleen zahn



CHARLENE COLBY, Plant 4, is surrounded by yule trimmings.



# TAKS

STATISTICS, more often than not, are just a lot of numbers. But once in a while someone puts them in such a way as to make you take notice.

As a case in point, these truly chilling figures from Portland Traffic Safety Commission.

Take the population of San Francisco—men, women and children.

Add the population of Dallas, and of Salt Lake City—plus the number of people in Atlanta.

Then add the population of Des Moines.

Plus the population of Tucson.

Plus those of Butte, Montana and Wheeling, West Virginia.

Add the population of Cheyenne, Wyoming.

And the number of people in Albuquerque.

On top of it all, add the population of Boston.

The grand total of all these 11 cities just about equals the number of highway casualties that occurred in the United States **last year!**

As the commission points out, it's an appalling number. And it gives some sort of weight to the regular warnings to drivers by this and other agencies whose job it is to reduce this incredible yearly slaughter and maiming.

And in the face of these anything-but-cold statistics, the gentle reminders to Tek drivers to steer clear of residential areas when going to and from work, to practice highway courtesy, to drive safely, sound a little less hollow, a little less routine, a little less cut and dried.

THERE'S NOTHING funny about any injury, of course. They all hurt, even though some of them happen in odd-ball ways.

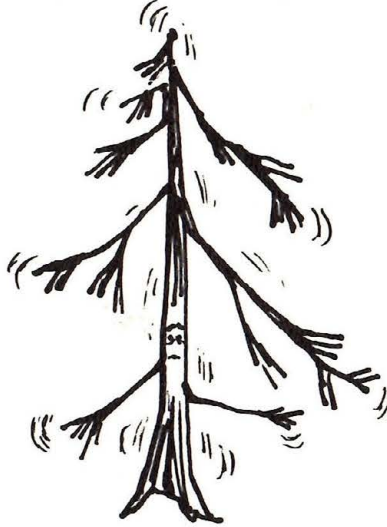
The Tek employee who recently sprung his shoulder lifting a "patient" onto a stretcher in First Aid class probably hardly laughs at all about it.

SOME STUFF from the field:

● Rick Ennis (Greensboro) reports that a Mr. Asher of the US Forest Service is using a 565 to help him study the nervous system of a pine tree. He's found that its nervous system will react in some ways similar to a human's.

The thing about a tree is, it will stand still to be studied longer than the average human. And its bark is probably worse than its bite.

Rick says he's heard of weeping willows, but never nervous pines.



● GEORGE OBINGER (Walnut Creek) says a company there that manufactures flashing lights has learned some interesting things: About seven flashes per second gives you vertigo, and five flashes per second repels insects. This frequency coincides with their wing movements, and makes them lose count if they get too close. They crash and probably become deceased.

● George tells another story: A customer, unpacking a 564, found a viewing hood inside the right-hand plug-in compartment. Tug as they might, it wouldn't come out; so they finally decided they'd have to remove the entire side panel. In this way, they got the hood out, and in the compartment under where it had been they found a note:

"To remove viewing hood, remove the side panel," it said.

YOUR FAVORITE Life Saver flavor probably isn't musk . . . .

But Australians like musk-flavored Life Savers, says Scotty Pyle (International Marketing), who was there recently and should know. He brought some back with him and gave out samples to innocent bystanders in the IO building. Their consensus was, these things **should** be called musk Life Savers. But he says Australians eat 'em up all over Down Under.

From personal experience: The kindest thing you can say about the flavor is, musk Life Savers do not taste like soap . . . .

SPEAKING OF AUSTRALIA . . . that country happens to hold not one but **all** of the world's rope-skipping records: Fastest, longest, etc.

How do we know? It says so in a handy volume, *The Guinness Book of World's Records* (formerly *Guinness Book of Superlatives*), available at some drug stores and from Mike Brand (Central Staff Services) on loan, if you ask him pretty.

The book tells you more interesting facts than you want to know—unless you're one of those folks who like to know **everything** and impress other citizens.

If a friend should ask who fell the farthest (without a parachute) and lived, you can answer quick-like that it was I. Chissov of Russia.

And you'd be right. Chissov (or I., as his friends call him) fell 22,000 feet (over four miles) from an Ilyushin airplane, hit against the steep snowy wall of a ravine, slid down, busted his pelvis and lived to get a promotion in the air force. (He has not, to date, broken his own record.)

ONCE YOU learn the book by heart, the next big step is finding ways to use the information. One way—if your friends don't happen to ask the right questions—is this:

**Friend:** What time is it?

**You:** Luella Puett of Detroit.

**Friend:** What?

**You:** Luella Puett. Didn't you ask me who the world's worst driver is?

**Friend:** No, I asked what time it was.

**You:** Oh . . . (optional) Sorry.

In no time you're known as a walking encyclopedia, and people across the street will point and whisper.

(Incidentally, Mrs. Puett, among her 97 traffic violations, included ramming a police car.)



A close runner-up, we think, is the French truck driver who in 1960 ran into the only tree in 1000 miles—a palm in the Sahara oasis of Tenere. The tree, the remotest in the world, is said to be dying.



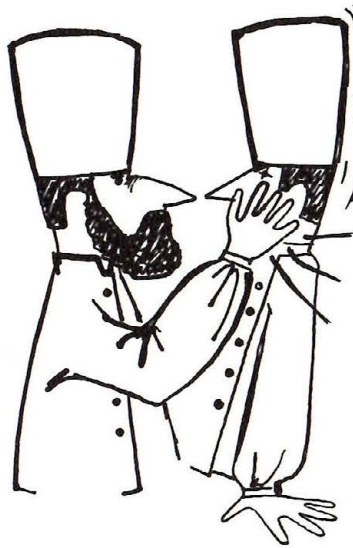
- The longest song title is, "Green With Envy, Purple With Passion, White With Anger, Scarlet With Fever, What Were You Doing in Her Arms Last Night Blues."

- It took only 4 minutes 57 seconds for a couple college kids to smash an upright piano into pieces that would fit through a nine-inch diameter hole. Their record still stands—the piano does not.

- The most primitive counters are the Yancos, an Amazon tribe who can't count past three (in their language, "poettarrorincoaroac," which probably leaves them winded).

- The world's greatest meat eaters? Uruguayans (240 pounds a year per person).

- Two Russians held the longest face-slapping contest. In 1931, Vasily Bezbordny and Goniusch squared off and whacked each other in the mush for 30 hours before calling it vzdnyia (quits).



- England has a lot of records: In Upminster, Essex, a 15-year-old ate 30 sacks of potato crisps in 59 minutes without a drink.

- And in London, Jacko, a dog owned by J. Shaw, captured all the world's rat-killing records. He did away with 1000 in less than an hour 40 minutes—the first 100 in 5 minutes 28 seconds! (This information tells us something, we're not sure what, about London.)

- The longest palindrome (word spelled the same backward as forward) is **saippukauppias**, which is Finnish for soapmaker. The world's longest soapmaker? The book doesn't say.

- The most unpronounceable word may be "chrzaszcs". (The book helpfully points out that it rhymes with "thrzaszcz.")

- The world's commonest name may fool you; it's Mohammed. The least common is probably Frodleigh D. Porramorra Jr.; there is no one by that name. (We just made it up ourself.)

OTHER GLEANINGS from the Guinness book:

- Jack O'Leary of Los Angeles hicked an estimated 160 million times over eight years, for the world's longest hiccough attack.

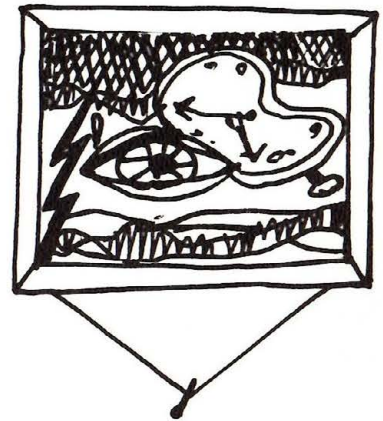
- Sneeze-wise, the fastest measured speed of expelled sneeze particles was 103.6 miles an hour, recorded by some scientist or other who had nothing better to do at the moment. (This is 'way faster than the 1.7 miles an hour that happens to be the world's speed record for spiders.)

- The earliest duodenal ulcer was written up in 1746. "Don't trade a headache for a duodenal ulcer," the book (may have) said.

- The largest single food dish? A whole stuffed camel. Arabians will walk a mile for a camel.

- The most consecutive rides on a roller coaster? 303, by Paul Anderson, Council Bluffs.

- The longest time a modern painting hung upside down in a public gallery with no one noticing was 47 days. The longest time one hung right side up with no one noticing, isn't specifically covered in the book.

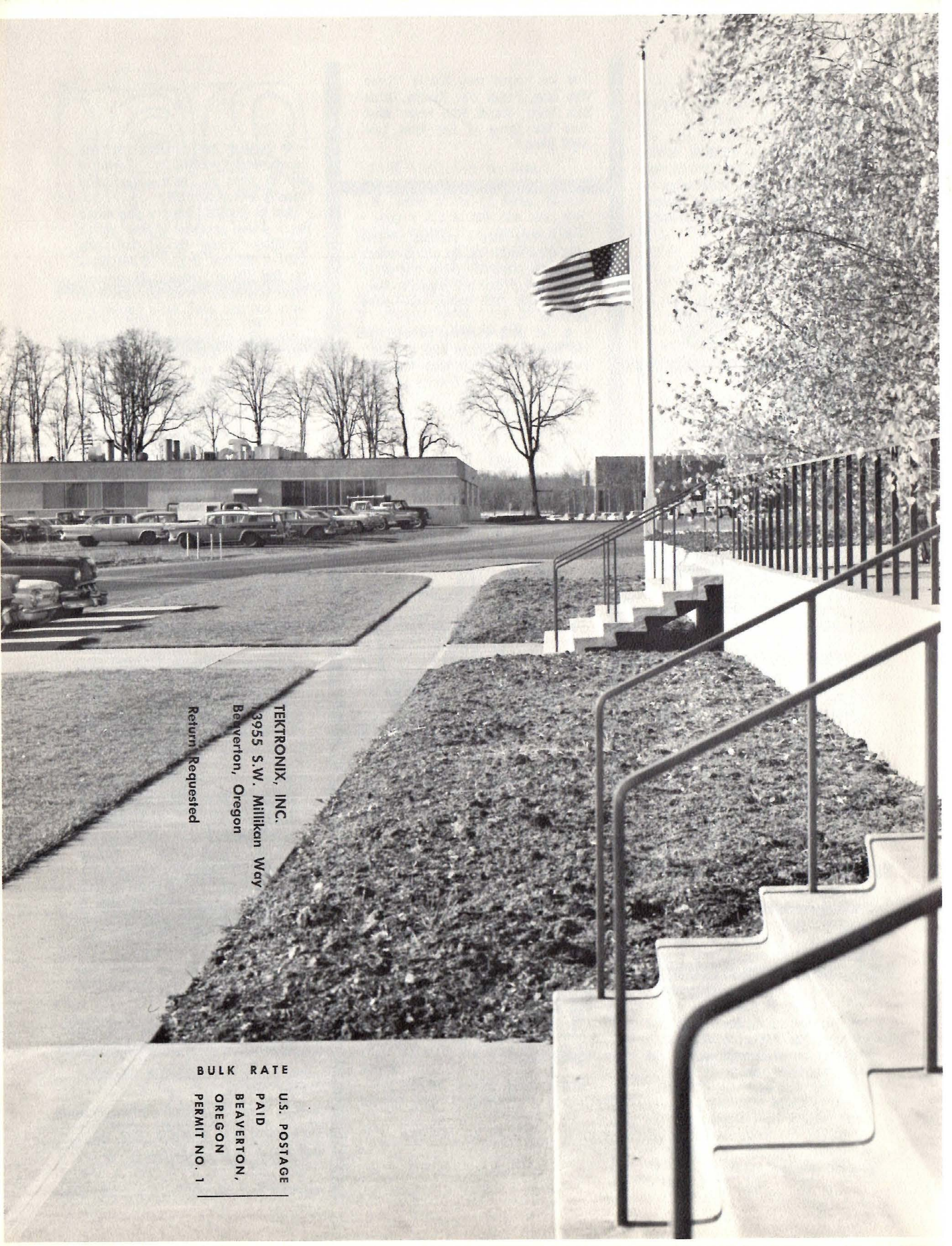


ANSWER TO TEKROSTIC NUMBER 3, LAST ISSUE:

"There is no substitute for the goodwill of our customers, and no better way of engendering the goodwill than by conveying through our actions our personal interest in their problems . . ."  
—Byron Broms, Group Rep Minutes

Another Tekroctic will be in the next issue.





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