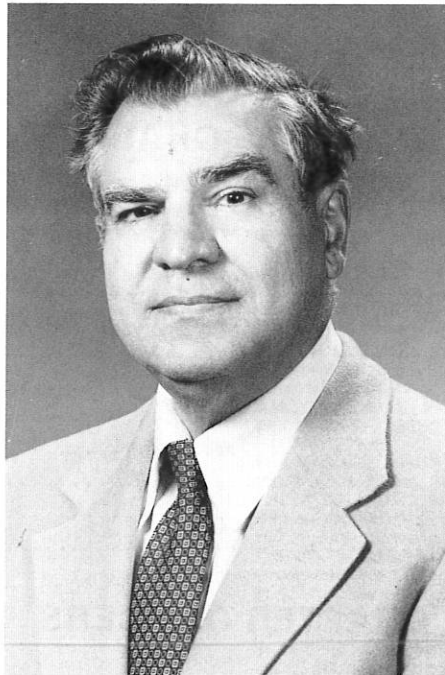
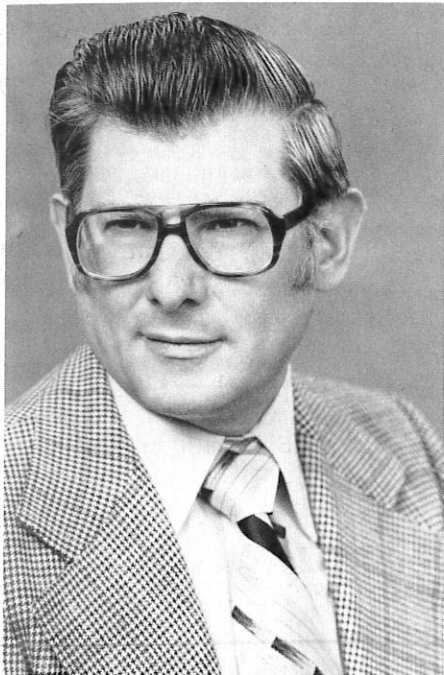


# Information Display

ALAN OBEL

The Official Journal of the Society For Information Display

JUNE, 1982



**THREE NEW FELLOWS ELECTED** — Shown here are the three Fellows of the Society for Information Display elected in 1982 by the Honors & Awards Committee, as announced on May 11 at the SID International Symposium in San Diego.

Left to right in the order in which they were introduced by Dr. Ifay Chang, new SID Vice President, are: Dr. Jay Brandinger, Division Vice President, RCA SelectaVision Video Disc Operations, Indianapolis. John Constantine, President, Constantine Engineering Laboratories Co. (CELCO), Mahwah, NJ, and Upland, CA. Dr. Peter D.T. Ngo, Member of the Technical Staff, Bell Laboratories, Holmdel, NJ.

Conducting the opening business session of the 13th annual SID Symposium was Gus Carroll, new SID President, a speaker with brevity and wit. Reporting a sound financial condition for the Society was Dr. John van Raalte, now SID Treasurer. The other national

officer elected was John Simonds, Secretary, as reported by Bernard Lechner, Chairman of the Nominating Committee.

This year's SID International Seminar, Symposium and Exhibition was eminently successful. Not only was the attendance large and enthusiastic, but several records were set. There were 118 technical papers by 311 authors, and 17 panelists participated. Walter Goede, Chairman, and the other 56 members of the SID 82 Program Committee deserve real acclaim. Thanks to the efforts of Lewis Winner, Symposium Consultant, there were 36 exhibitors and some 100 exhibitor attendees. And let's not forget our new National Office Manager, Bettye Burdett, who signed up a new Sustaining Member and approximately 190 new SID members at her first Symposium. Those new Members will be listed in our September/October issue.

**FRONT COVER MATERIAL WELCOMED:** Every month **Information Display** usually features one or more active members of SID and the products with which they are most closely associated. Please send a glossy print and appropriate captions so that you, too, can be on our front cover. Send your material to Ted Lucas, Editor, P.O. Box 852, Cedar Glen, CA 92321, or to our National Office Manager, Bettye Burdett, for Information Display, 654 North Sepulveda Blvd., Los Angeles, CA 90049. Next deadline for material from you is August 10 for the September/October issue. If you miss that, try for the November issue. **NOTE:** We also welcome feature articles on interesting projects.

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Congratulations . . .  
to the new SID National Officers, elected to serve for the next two years. Each one has already proved his dedication to our Society by donating literally hundreds of hours toward the advancement of our Society. Also congratulations are due to the two new Directors and four new Committee Chairmen.

We're now listing SID Sustaining Members on page 3 because this roster, with 74 corporate supporters, has outgrown page 2. This healthy growth, along with new individual Members, is encouraging. But we need more: additional SID Members, more advertisers to keep your Journal growing, more feature articles on interesting topics. Support your Chapter Chairman and Program Chairman every month. SID is in a dynamic, growing industry. It will grow more rapidly with your help, given every month.

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## Exhibitors' Corral at SID 82

by Ted Lucas

For some 20 years before I deserted the peddler's pack for my trusty typewriter, I learned that when times are tough you work twice as hard. A recession separates the men from the boys. Mere order-takers fall by the wayside. Sales engineers who really know how to apply their products continue to book orders.

At the 36 exhibits of SID 82, a record number thanks to the efforts of Lew Winner, Walt Goede, and many others, I found a host of enthusiastic applications experts who know how their products can be used effectively in the growing, dynamic display industry. Here's a roundup of products exhibited with names of some people manning the booths.

Aydin Controls featured a color graphic terminal with 13-inch high resolution CRT, their AYGRAF 3D graphics software, and a low-cost GRAFICS™ system developed by Lateral Graphics Systems for artists unfamiliar with computers. Aydin also showed their 19-inch high resolution monitor.

At the AEG-Telefunken booth in addition to CRTs for industrial and military applications there were image intensifier tubes, infrared image converters, camera tubes, and large-area LC displays.

Among the DuMont CRTs shown, ranging from tubes 1 inch in diameter to designs with 25-inch rectangular faceplates, were new HUD devices, situation displays and ECM units — all kinds of CRTs for cockpits, combat information centers, and air traffic control. Fiber optic faceplate CRTs for both paper and film recording were also in evidence from this division of Thomson-CSF.

Litton Electron Tube Division featured a wide variety of multi-beam CRTs, including direct view, projection, and fiber optic faceplate types.

Chatting briefly with Stuart J. Fryer, marketing manager, Rank Electronic Tubes, he pointed out that his firm recently purchased the CRT products of Watkins-Johnson. Rank tubes are not only flying in cockpits of such advanced aircraft as the F-16 and F-18, they are being applied for photo-typesetting, film and data processing.

Among exhibits at the display by Raytheon Industrial Components Operation were split-anode beam penetration color CRTs ranging from 6 to 21 inches diagonal, described as having high resolution, fast switching, and constant focus for all colors.

Shown by THORN EMI Brimar were CRTs for radar, instrument, data display and monitor applications, as well as a pulse generator for testing CRTs.

A dynamic display by Westinghouse Electric included both a variety of CRTs and also a new miniature underwater TV camera. This camera, designed specifically for inspecting the internal areas of nuclear reactors, is only 1.25 inches (32mm) in diameter and a foot (305mm) long.

When I talked with Howard Robins, project manager for Zenith's color display monitor, he was also displaying his firm's low-cost information terminal. "We've been late getting into the terminal business," he said, "but the response to this unit, which includes an auto-dial modem, has been excellent." With him was Alain d'Hautecourt, expert in the picture tubes and monitors available from Zenith's Rauland Division.

At the booth of Visual Information Institute, who specialize in TV test instrumentation, I got a promise from bright young John Harshbarger, research scientist, that he'll send me a feature article suitable for a future issue of *Information Display*.

### Compact Power Supplies

In a brief conversation with Wayne Homari of PTK Corporation, he told me first how tough and competitive is the business of high-voltage power supplies for military and commercial CRT displays — and then added that his company is expanding into a sizable new facility!

Looking at the variety of small solid-state units in his display, including corona and ion supplies, I couldn't help thinking how the art has advanced, with improved components and clever design engineers, from the dim past 30 years ago when I was an engineer working with early cable TV systems.

Also to be admired for the same reasons were power supplies, shown by Bertan Associates, Keltron Corporation, Spellman High Voltage Electronics Corporation, and Venus Scientific, Inc. I chatted briefly with Fred Farrace and Janet DeVita while looking at the dual output (anode and focus) CRT supplies in their Venus exhibit.

Not so incidentally, let me express my gratitude to such component manufacturers as these makers of HV power supplies because they advertise regularly in *Information Display*. You've helped the SID Journal grow, in the 5 years I've been editor, from a 12-page newsletter to a publication that averages twice that size and carries numerous original feature stories by SID contributors. As our Association Treasurers (past and present) point out, we're not self-sustaining yet, but every advertisement helps in our upward path.

I almost forgot to mention that Douglas Steers of Spellman pointed out an exhibit of a new 100 kV compensated voltage divider for ac as well as dc measurements, so that you can use low voltage instruments and oscilloscopes for high voltage measurements, including fast rise/fall applications such as pulsed modulators and capacitive discharge systems.

### Shields and Yokes

As attendees of Session V of the SID 82 Symposium learned from Joseph Castellano, Stanford Resources, although the world market for such alternate technologies as LEDs, LCDs, and plasma displays is growing and will continue to expand, CRT displays will remain in the catbird seat. Industrial applications of CRTs will grow from 7 percent of the market in 1982 to 19 percent in 1990, Castellano predicts. Data terminals with CRTs will grow from a volume of \$50 million this year to \$500 million in 1990.

This is good news for such component makers as Rick Vance, president of Ad-Vance Magnetics, leading supplier of magnetic shielding with two plants in Indiana and one in California. Rick provided an excellent article to *Information Display* last year and was busy, with assistants including his lovely wife, explaining how shielding helps CRT displays at his exhibit in San Diego at SID 82.

Another article author I was glad to meet was Dr. Henry Marcy, head of Syntronic Instruments, a pioneer still active in developing commercial, industrial, and military yokes for monochrome and color CRTs. Henry, like several other loyal supporters of SID, brought along his charming wife to grace his exhibit.



As you've noticed on the cover of this issue, John Constantine, founder of CELCO, has been elected a SID Fellow for his many contributions to display technology. His company, with plants in New Jersey and California, showed some of its products: deflection yokes, focus coils, deflection amplifiers, CRT systems, ramp generators, and a CRT spot analyzer.

Still another exhibitor of yokes was Display Components, Inc. (DISCOM) showing units for shadow-mask color CRTs and a low-inductance calligraphic deflection yoke operating with a 19-inch in-line shadow-mask CRT.

### Coatings and Filters

Blazers Optical Group showed a variety of conductive, color correcting, and anti-reflective coatings for glass panels.

I enjoyed chatting with Richard Paynton and his wife who run Dontech Inc. and make AR panels for contrast enhancement. They were showing a new product, conductive windows. These are laminates of microwire mesh and transparent materials, including acrylic and polycarbonate plastics, for EMI and RFI applications.

Polaroid also showed AR filters incorporating circular polarizing. This technique consists of a linearly polarizing filter and a  $\frac{1}{4}$  wave retarding element with slow and fast axes at  $45^\circ$  to the axis of the polarizing filter. This cuts down reflections and glare while improving contrast.

Not every corporate treasurer stands booth duty at a trade show, but Richard Smith, treasurer of Precision Glass Laminations, took the time to show me his firm's contrast enhancement filters for CRTs and circular polarizing filters for plasma displays.

I had a brief chat with Tkashi Matsu-Ura, manager of production control and QC for Hoya Optics, a Tokyo firm with a branch in California. Exhibited were numerous glass filters for contrast enhancement.

Incom, Inc. showed fiber optic faceplates for CRTs and for rear projection screens, as well as light guide assemblies.

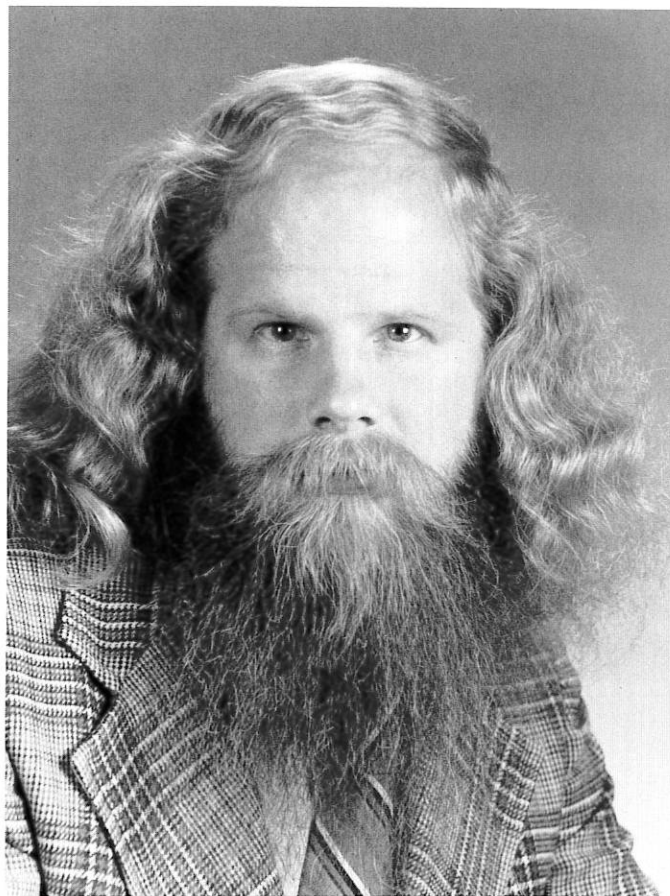
Metallized and bare glass blanks for LCD and other display applications were shown by Imtec Products, makers of Pol-Edge™ glass plates — said to be clean and fully chip-free.

### Glass for Displays

Corning Glass Works showed sealing glasses, CRT bulbs and components, precision flatplates, faceplates, CRT gunmounts, glasses for LCDs and LEDs as well as future large ELD panels.

A wide variety of CRT bulbs, including fiber optic and projection designs, as well as faceplates were on view in the Schott America booth.

Photon Power, Inc. of El Paso, exhibiting a variety of electro-optical glass products, is jointly owned by Compagnie Francaise des Petroles, Paris, Libbey-Owens-Ford, Toledo, and John Jordan, a Texan who worked with D.H. Baldwin Company, noted for pianos and organs, founder of Photon Power. In talking with Jack La Spina and Arturo Cervantes of this company, I was particularly interested in their work on photovoltaic panels since your editor has written three books on solar energy applications and lives in a solar house. Late in 1982, according to Jack and Arturo, Photon Power that will be selling photovoltaic panels, Cds/CuS on glass, at a price that will come closer to making it possible to get some of your home's electricity from the sun.



**SPECIAL AWARD WINNER** — Dr. Larry E. Weber, University of Illinois, received a special award plaque at the opening session of the SID 82 Symposium for his outstanding research work on plasma displays.

### Other Display Technologies Exhibited

Texas Instruments showed a variety of ICs for driving displays, including vacuum fluorescent dot matrix displays.

A manufacturer of such displays, exhibiting both dot matrix panels and displays, was Choa Display Corporation, Matsusaka, Japan, represented by MH&W International, Mahwah, NJ.

Noel Smith, senior applications engineer for SAI Technology, whose plant is just a few miles from the SID '82 exhibit hall in San Diego, showed me some of his company's advanced plasma display systems and terminals. (*Information Display* has been promised a feature story from SAI one of these days, when the moon is bright.)

### Measurement Instruments

Last but by no means least in this story must be a loyal SID Sustaining Member, the Photo Research Division of Kollmorgen Corporation. Exhibited were a computer-controlled spectroradiometer and a digital photometer/radiometer. Their fast spectral scanning system includes a preprogrammed microprocessor and memory for determining the color and intensity of displays, light sources, and reflected samples. Throughput is high, and measurements can be made at a variety of light levels.

Pictures of exhibits at SID 82 will appear in our September/October issue. We're not as speedy yet as your local newspaper.

## Beatrice Winner Award Announced

By action of the SID Board of Directors on May 9, a new award has been initiated. This award is named after the late Beatrice Winner, wife of Lewis Winner, who for many years as Symposium Consultant has been a key factor in making this annual SID event successful.

The first Beatrice Winner Award, given to a SID Member who has rendered distinguished service to the Society for Information Display, will be announced at the SID 83 Symposium in Philadelphia. Nominations for this Award should be sent to Irving Reingold, Chairman, Honors & Awards Committee, 409 Runyon Avenue, Deal Park, Deal, NJ 07723.

## Report on Displays in Taiwan

While your editor was attending the SID 82 Symposium, Dr. Ifay Chang took part of one lunch break to provide this interesting report on his recent trip to Taiwan.

"I was invited by the Electronic Data Processing Center of the Executive Yuan as an advisory scientist. They asked me to participate in an effort to initiate and promote projects leading to the automation of Chinese offices. There is a nationwide drive by the Taiwan government to accelerate the applications of computers and data communications for two reasons:

1. To improve national productivity
2. To help in establishing high technology industries.

"I might add that in 1981 computer system installations increased by more than 80 percent in Taiwan. This country has sustained high economic and industrial growth for years. There is large buying power, especially for such products as information displays.

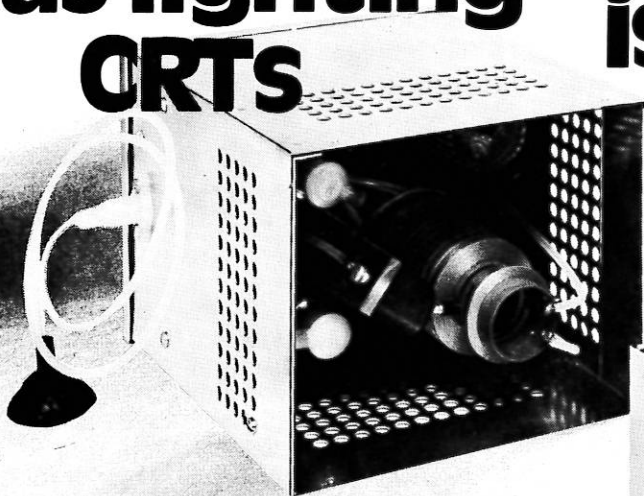
"There are approximately 20 display manufacturers in Taiwan. Some are subsidiaries of U.S., Japanese, and European firms; others are locally owned. Production quality of CRT displays seemed good to me. Companies having research facilities appear to be most successful and most respected in the display community. There are a few display-related equipment makers. I believe there is a market for such products as AR panels, filters, yokes, and other components, as well as high resolution displays and printers.

"However, the Taiwan government is most interested in promoting joint ventures. In addition to private venture capital, the government is offering attractive conditions for investment. An example is an industrial park, dedicated to science and technology, with attractive terms offered to entrepreneurs. The government will provide 49 percent of the capital, including property and facility, and permit an entrepreneur to retain 51 percent of the ownership of a new company, and therefore a controlling interest. Also if the new company in this Taiwan industrial park is developing a new technology, the technology itself can be valued on the books as a large part of the 51 percent controlling interest.

"Dr. Alvin Tong is in charge of this industrial park. Any entrepreneurial reader of this journal who wants to get in touch with Dr. Tong can get his address from me."

Ifay, our dynamic SID Vice President, also wants to call the attention of readers to the International Computer Symposium 1982 to be held in Feng Chia University, Taichung, Taiwan, Republic of China, December 15-17. Among principal topics are computer graphics, CAD/CAM, office automation, robotics, and business data processing. Papers are invited. Authors must submit a 200-word abstract by July 15 to the Program Chairperson, Professor S.S. Yau, Department of Electrical Engineering and Computer Science, Northwestern University, Evanston, IL 60201.

# in the 40's **SPELLMAN** was lighting CRTs



**Spellman Model 7516**  
*Built in 1947*

This vacuum tube pioneer and predecessors provided high voltage source for early television, radar and projection systems.

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*A design of the '80's*

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*For lab, development or industrial use.*

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*This is only a small sampling of some typical CRT power supplies.*

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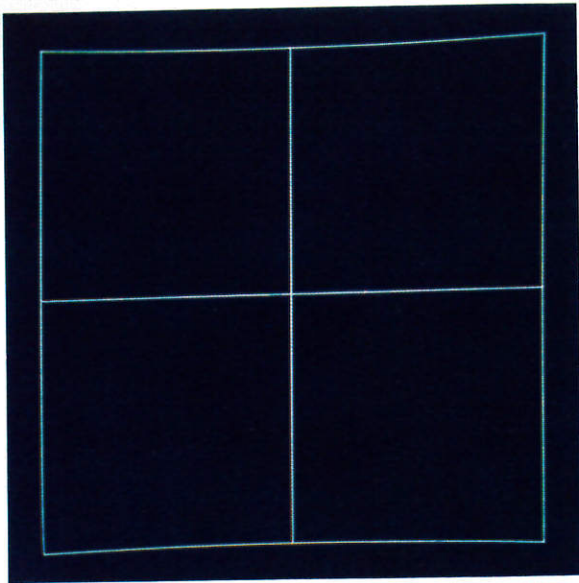
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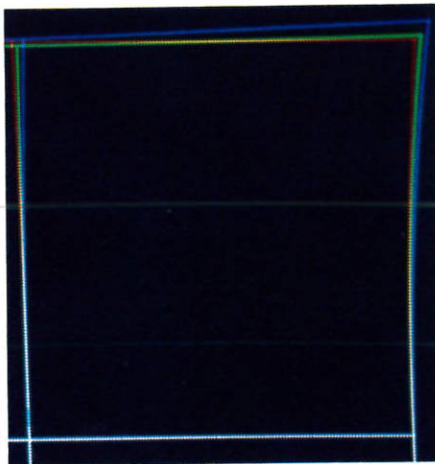




# Celco's in-line color Yoke for perfect black & white.

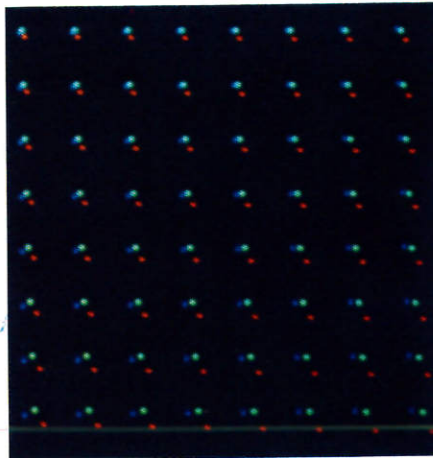
The CELCO Color Yoke Produces Perfect B&W

Engineers who design color displays requiring low inductance look for **perfect black and white** on their test patterns for best convergence. They do not **want** to see the beautiful colors illustrated in the error patterns — just black & white.



Typical Convergence Error Problem

CELCO color yokes provide complex magnetic fields to be compatible with your color CRT. The Yoke-CRT combination is optimized to achieve color purity and best convergence for your display applications. A precision color yoke is required to deflect the beam to the correct apertures in the shadow mask. These impinge on the proper phosphors to produce the blue, green, and red patterns.



Typical Dot Pattern Error Problem

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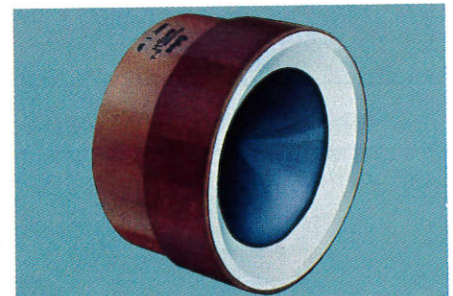
\*Deflectron® is our registered trademark for Delta-Gun Deflection Yokes in the 1950's.

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# Update on Demand Information Systems

by Erwin A. Ulbrich Jr.,  
(Past President of SID, 1976-78)  
Twenty First Century Electric, Inc., Whittier, CA

## Synopsis

A discussion of the implications of consumer demand information systems for the U.S. public and for SID members. A 1972 article written by the author in this Journal described two revolutions in demand information systems: (1) The expansion of broadcast television in the 1940s, and (2) the expansion of cable/wired cities in the 1970s. This update describes the rapid changes now occurring due to direct broadcast satellites, which are effecting a third revolution in the 1990s.

## Terabits

In 1919, E.F.W. Alexanderson showed that there was only frequency sufficient spectrum for 12 first-class transmitting stations in the world (10,000-20,000 meters wavelength) and that each could only approach 100 words a minute. He forecast that various improvements might increase this by a factor of 200, at best allowing a signal flow of 15 megabits per second for the whole world.

In 1969, my analysis of my own household showed a signal flow of  $1.47 \cdot 10^{11}$  bits/day or 1.7 megabits per second just for my household. The estimated cost was \$31.30 per Terabit. This was the first revolution, and was primarily brought to pass by the expansion of television.

In 1972, we forecast that the expansion of wired cities could again cause an increase in signal flow to households, perhaps to 0.288 terabits per day or 3.3 megabits per second. In addition, at somewhat higher cost, a greater degree of demand for information-when-you-want-it could be satisfied. This was the second revolution, and was primarily brought to pass by the expansion of cable TV and wired cities. One look at the enormous fees front-ended by investors to buy cable franchises today shows the strength of the revolution.

## Toys for the Second Revolution

This second revolution also spawned a flood of hardware for consumers. Specialty cable items, tape recorders, color cameras, disc players, media libraries, projection systems, and TV games are major items. One look through a few issues of this journal shows that many members of SID are working on these items and that enormous sums are being spent on their develop-



Figure 2. 11-foot diameter receiving antenna in author's yard.



Figure 3. Low noise amplifier, horn, and rotator.

TVRO PRODUCTS  
(television receiver)

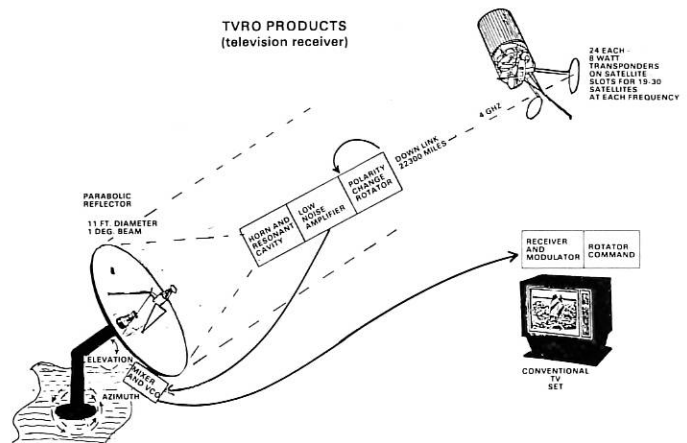


Figure 1. Now about 50,000 TVRO stations, most important in remote locations.

ment. The \$100 million plus dollars that RCA spent on developing the disc player market in 1981 is a good example.

## An Anomaly

A paper at the SID International Symposium in May 1982 disclosed that the display marketplace could be sized at about \$6 billion. When we started the Society in 1963, I would have estimated the display marketplace at perhaps \$200 million to \$600 million, depending on how you count television production. Somehow, SID has stayed about the same size (1500-2000 members) while the marketplace has been expanding rapidly, an anomaly which defies explanation. (Editor's Note: See why I'm pleading for SID Members' cooperation on page 2?)

## TVRO Products

Beginning about 1967, forecasts were made showing the possibility of satellite reception by consumers. In 1977 the first consumer systems became available, and suddenly the possibility of consumers using spatial diversity and nationwide coverage to grasp information-when-you-want-it became a reality. Figure 1 shows a block diagram of the concept, and Figures 2 through 6 show typical hardware and TV pictures received via satellite. In 1982, this satellite receiving hardware can be purchased for about \$2,000 or \$30 per month. It can bring at least 20 megabits per second to a consumer at an indicated cost of 58¢/terabit, not counting the cost of the satellite or programming — which are small but not negligible. The satellites can be placed 4 degrees apart in space (maybe less in the future), and each one can



Figure 4. Azimuth and Elevation Hand-Cranks.





Figure 6. 24-hour weather channel.

transmit 500 MHz or 24 wideband TV signals with numerous additional audio or other subcarriers. In the foreseeable future, this can result in nationwide coverage by about 15 or 20 satellites, each with 24 channels of video. This 480 channels at relatively low cost can allow a given consumer the choice of information-when-you-want-it. Beware of the Alexanderson effect shown earlier on longer range forecasts. I find it has revolutionized my use of information, and I forecast it will be the third revolution. The pictures show typical components in 1982.

### The New Networks

New networks are coming. A Univision network has already been set up and demonstrated for *all* of the Spanish-speaking people in the world (300 million). China and India will soon have satellites which can transmit to 1.5 billion people in several languages. Weather data images showing pixels as small as one square mile are available 24 hours a day. I can sit in my living room and watch a tornado in progress on radar in real time. A variety of news, entertainment, education, religion, and other information is on tap. A variety of ways of paying for the satellite and the programming are in being, ranging from watching conventional commercials to sending monthly checks to originators of material intended for cable head-ends.

I can get a better signal from WGN (Chicago) in California than I could get when I lived in Illinois, and it comes with 6 subcarriers including WFMT, the fine music station. Think of an FM station with nationwide coverage instead of a 30 mile circle. Hard copy is possible and augurs electronic mail and imagery.

### The Third Revolution

This revolution is coming, and it is inexorable because



Figure 6. WOR-TV, New York City, received by the author in Whittier.

of the demand for information at low cost and effort. The impact on society should be positive; but, as with the earlier revolutions, it is apparently guided by entrepreneur's profits, by government fiat, and by the laws of chance. With any luck, it should enhance our chances for an improved life, liberty, and the pursuit of happiness.

As far as SID members go, the revolution should continue to expand their marketplace and if nothing else will probably double the number of TV sets per household in the decade. To discuss just one of hundreds of possible products, picture a flat panel television (your choice of technology) on the back of an aircraft seat. A servoed antenna on the aircraft continuously tracks a 24-channel satellite, allowing the customer a choice of entertainment on long or short flights at low cost, with light weight carried by the jetliner. Thousands of aircraft with hundreds of seats offer significant market potential. It might be reasonable for SID management to take some positive steps to involve the Society in this revolution. Maybe this would be one move toward cracking the anomaly described earlier.

### The Good News and the Bad News

The good news is that more powerful satellites are coming and that higher frequencies are coming, reducing antenna size and system cost. In addition, closer satellite location and the use of partial coverage beams can expand the diversity of offerings. The bad news is that we have not optimized the system (too low of satellite power, too big of antenna size) so that the consumers must pay more both in components and in real estate (back yards instead of roof tops). But, in my view, this revolution is inexorable because of society's quest for low cost information-when-you-want-it, and at 58¢/terabit the price is right. We might as well enjoy the ride.

SID Members — With a self-addressed stamped envelope, contact the author for a complimentary listing of a basic computer program that calculates azimuth and elevation to U.S. satellites as of April 1982 from anywhere in the Northwestern half hemisphere. If you know your latitude and longitude, send that information for the specific angles from your location.

Erwin A. Ulbrich, Jr.  
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 8136 G Byron Rd.  
 Whittier, CA 90602

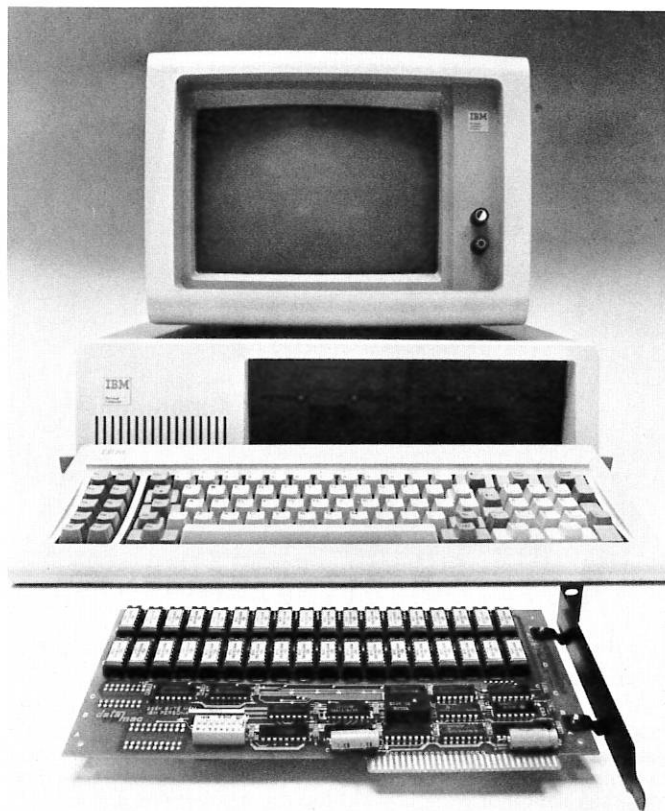


## Memory Expansion Boards for IBM Personal Computer

Datamac Computer Systems, Sunnyvale, CA, recently announced that Computerland has selected the Datamac 64-Kbyte memory expansion board for use in the IBM Personal Computer.

According to Bob Lindgren, Vice President of Datamac's Peripheral Products Division, the new, high-capacity board can be upgraded in 64-Kbyte increments to a maximum of 256 Kbytes. The board will allow IBM Personal Computer users to install up to one megabyte of memory without sacrificing system flexibility.

Another manufacturer of memory expansion boards for the popular IBM Personal Computer is Macrolink, Inc., Anaheim, CA. According to Dave Vednor and Bill Goodale, their 64-Kbyte to 256-Kbyte Macromemory™ boards are selling briskly via Computerland outlets and also by direct mail. Macrolink also specializes in peripheral controllers and memories for Perkin-Elmer computers.



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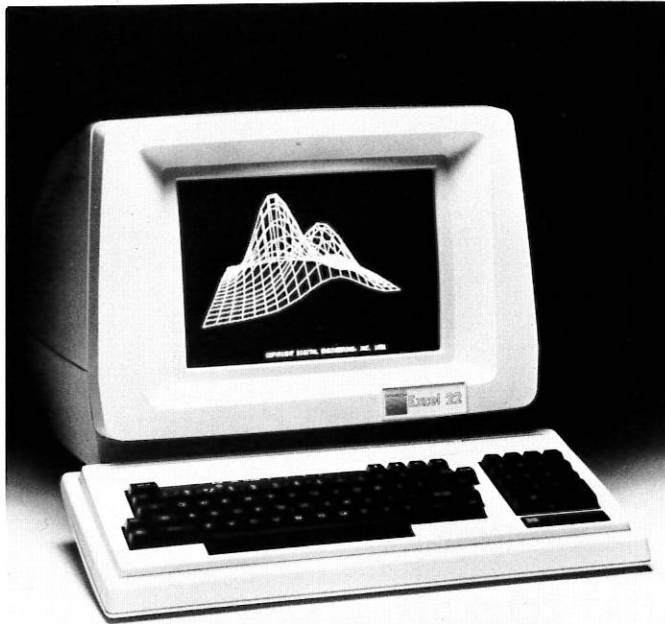
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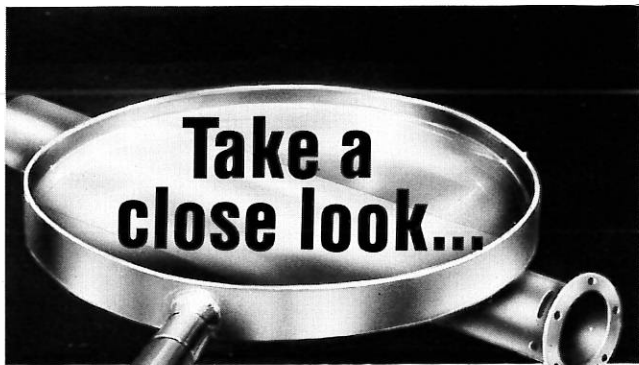
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The Excel 22G, introduced recently by Datamedia Corporation, Pennsauken, NJ, is a monochromatic point-to-point graphics terminal that provides users with a variety of graphic choices including vector drawing, point plotting, arc drawing and area fill. The new terminal is VT-100 compatible and supports most graphic software packages that utilize a Tektronix 4010 driver. In addition, the unit provides solid, dotted and dashed lines and can define text by height, width and line angle, either fixed or proportionally spaced. A crosshair cursor comes standard. A light pen is optional.



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**GTE Will Provide Four-City  
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GTE recently announced that it will offer economical voice and data satellite communications services to private users in four of the nation's largest cities beginning in November.

GTE will construct satellite earth stations in New York, Chicago, Los Angeles and Houston to serve the system. The system will be GTE's first interstate satellite transmission system for private line users. It will provide services at least 30 percent less expensive than the American Telephone and Telegraph Company's private line services and lower than existing tariffs of other common carriers for comparable services, according to Edward J. Reardon, at GTE headquarters, Stanford, CT.



The Ferranti 'ULA DESIGNER' — consisting of interactive edit terminal, control console, DEC PDP11/23 minicomputer, check plotter and digitizer — installed in user's facility. The interactive design system features all CAD facilities necessary to specify, design and verify ULA LSI and VLSI circuits.

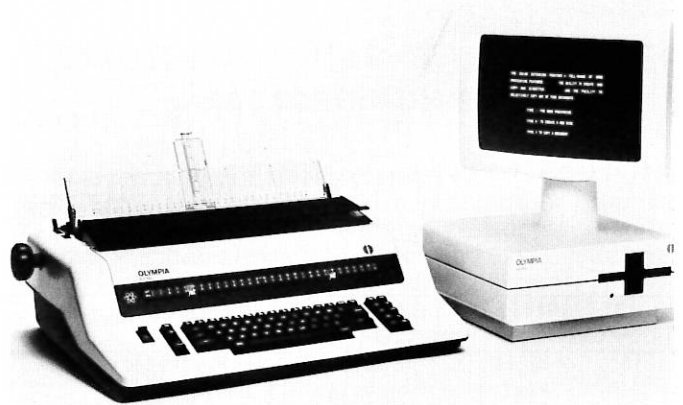
## Olympia EX100 Electronic Typewriter Extension

Olympia USA, Somerville, NJ, marketer of Olympia office products and systems, recently introduced the Olympia EX100, an electronic typewriter extension with word processing system capabilities. This new system is said to be notable because of highly flexible operation at a very low cost.

Consisting of an Olympia electronic typewriter, a 12-inch diagonal video display screen and a file storage device, the new EX100 electronic typewriter extension performs all word processing functions, including automatic letter writing. The system has virtually unlimited document storage, the maker states.

Owners of Olympia ES series electronic typewriters can easily field upgrade their typewriters to word processing systems simply by purchasing the system's display/file storage device. Minor electronic typewriter modification is required and easily performed by any Olympia dealer service representative, according to Chris Fatta, advertising manager of Olympia USA, Inc.

A multitude of word processing functions can easily be performed: insert or delete letters, words, punctuation, or paragraphs . . . correct errors . . . restructure paragraphs . . . or change one word throughout an entire document by just changing it once — all without retyping.



The Olympia EX100 Electronic Typewriter Extension Olympia USA (201) 722-7000

The new Olympia EX100 system will also hyphenate automatically, and move words down to the next line if new words are added. It automatically combines names and addresses with text for automatic letter writing. There's also an option that checks spelling. Even more, the video display/file storage device may be unplugged and moved from typewriter to typewriter. Operator training is available from Olympia electronic typewriter dealers.

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## SID CALENDAR

JULY to DECEMBER 1982

1982		
July	1	Proceedings, Volume 23, No. 2, 1982, Mailed
	20	Quarterly Chapter Rebates Mailed
October	18	Executive Committee Meeting
	19-21	1982 International Display Research Conference, Cherry Hills, NJ

## OTHER EVENTS

1982		
June	2-4	ACM/SIGMOD International Conference on Management of Data, Orlando FL
	7-10	National Computer Conference, Houston, TX
	14-17	National Computer Graphics Association, Anaheim
July	17	ACM/NBS Symposium: "Computing and Government", Gaithersburg, MD
	19-22	2nd International Conference on CAD/CAM, Manchester, England
	26-30	SIGGRAPH '82, John B. Hynes Veterans Auditorium, Boston
September	15-17	Local Area Networks 82 and 6th International Fiber Optics and Communications Exposition, Los Angeles
	21-23	Electro-Optics/Laser Conference '82, Boston
	21-25	International Business Equipment Exhibition, Jakarta, Indonesia
October	11-14	Information Management Exposition & Conference, New York City
December	15-17	International Computer Symposium, Taichung, Taiwan

## Computer Graphics In Business: European Market to Increase More Than Ten-Fold in 1980 Decade

Computer graphics in business applications, a \$40 million market in Europe in 1980, will increase to \$150 million in 1985 and to \$550 million in 1990, according to a new market study by Frost & Sullivan, New York City. That works out to more than a ten-fold increase over the 1980 decade.

Says Joe Savino, project director of Frost & Sullivan, business applications currently comprise 10 percent of the entire computer graphics market in Europe. Slide generation turns out to be the main business use at this time.

In the future, three other application areas within the business environment will provide the major impetus to the market. These include decision-making charts that show: (1) relationships and compare data, (2) graphs that show rates of change, and (3) complete information management reports.

Office automation will be another important domain for computer graphics, the F&S study adds.

An analysis of the market growth by country reveals that West Germany will pace business applications in computer graphics. The market in that country at \$10 million in 1980 will increase to \$38 million in 1985, and to \$137 million by decade end.

Next comes France, whose \$9 million market in 1980 will increase to \$122 million in 1990. The United Kingdom follows, with an \$8 million market in 1980 increasing to \$102 million in 1990.

Trailing is Italy, a \$7 million market in 1980, reaching \$88 million in 1990. All other European Economic Community countries collectively account for a \$7 million market to increase to \$96 million by decade end.

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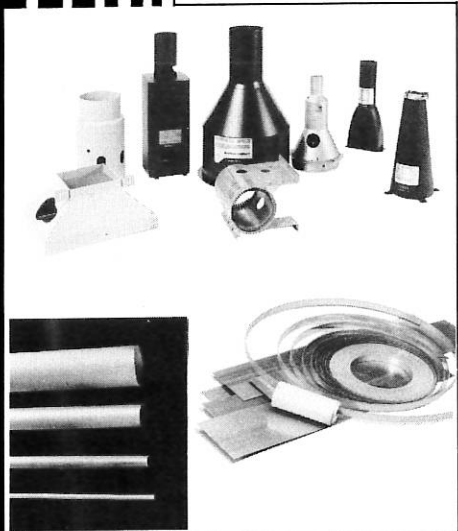
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GREETINGS TO NEW SID MEMBERS!

Each month you'll find a roster of new SID Members, listed by Chapters with the Chapters in alphabetical order. If your name — or a friend's — should have been listed and was inadvertently omitted, please let Bettye Burdett or your Editor know immediately. We'll make amends in the next issue. See the front cover for your choice of addresses to which to send vital data.

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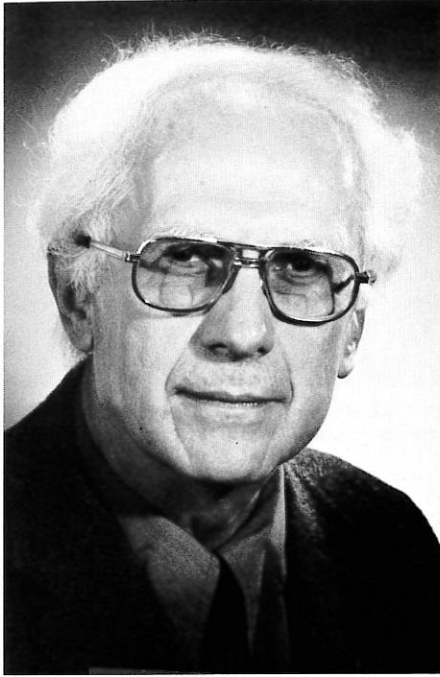
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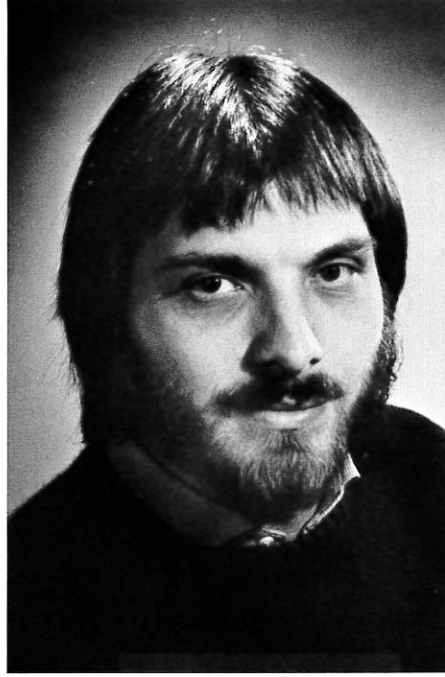
## Best Paper Awards Announced

Plaques with appropriate citations were awarded to the following authors of papers selected as the best presented at the SID 81 Symposium: 1. "A Multilayer Thin Film Electroluminescent Display," by Ferdinand Williams and David Morton, University of Delaware (awarded in absentia). 2. "A Color Write-Through Direct-

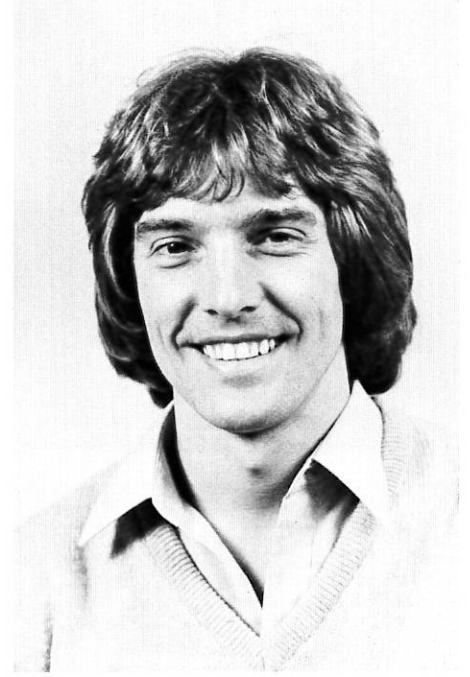
View Storage Tube," by Thomas W. Woody, Tektronix, Inc. 3. "Rotation of Instrumentation Images on a Raster-Scanned Display Utilizing Polar Coordinate Transformation," by Christopher H. Strolle, Terrence R. Smith, and Glenn A. Reitmeier, RCA Laboratories.



F. Williams



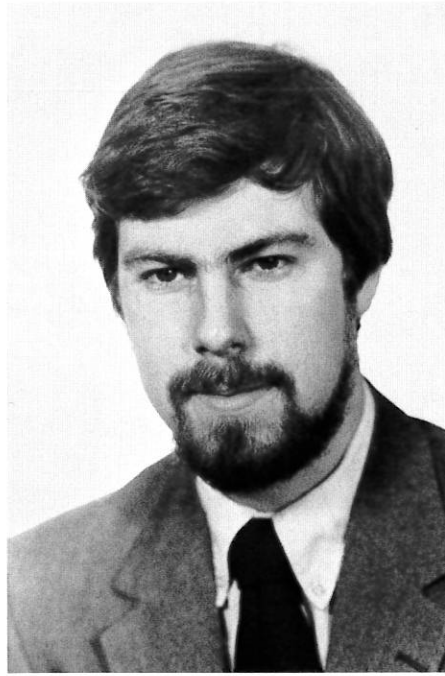
D.C. Morton



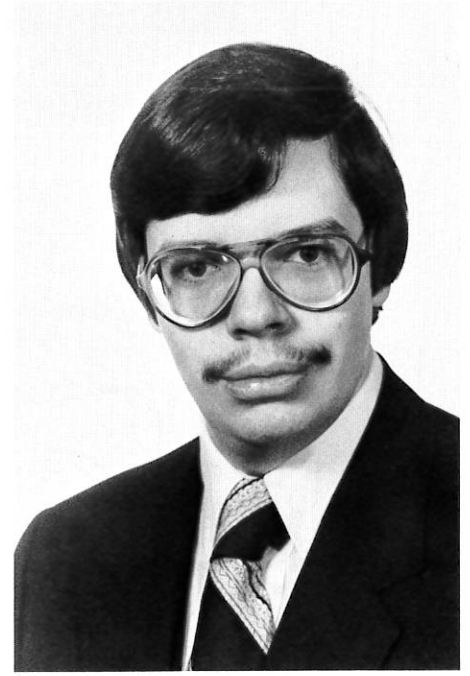
T. Woody



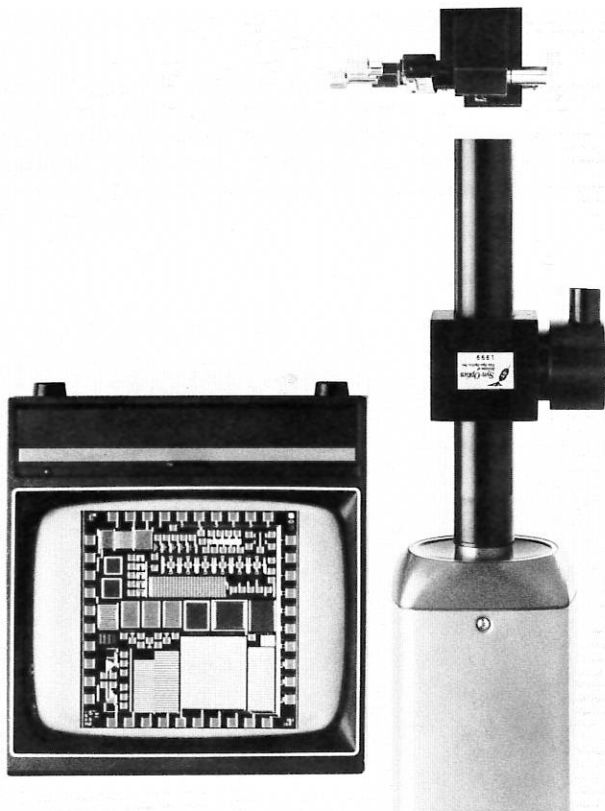
C.H. Strolle



T.R. Smith



G.A. Reitmeier



Syn-Optics, Sunnyvale, CA, has introduced a new vision system, combining a miniaturized television camera with high magnification so as to aid in performing various electronic assembly and industrial production operations.



CADO C.A.T. III made by CADO Systems Corp., Torrance, CA, is a multi-tasking, multi-terminal system with data processing, word processing, and message processing capabilities. The system, which can support four terminal devices in its expanded configuration, has 64 Kbytes of memory and up to 15 megabytes of storage. Fully compatible with CADO's entire product line, the CADO C.A.T. III executes any of CADO's library of over 300 applications programs packages.

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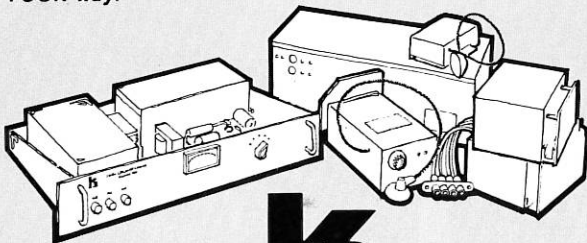
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## PIX FROM SID 82, SAN DIEGO



Shown at SID Directors Meeting on May 10 in San Diego are the four officers elected for two-year terms, 1982-1984. Left to right are Gus Carroll, President;

John Simonds, Secretary; Dr. Ifay Chang, Vice President; and Dr. John von Raalte, Treasurer.



Some of the attendees at the SID Directors Meeting included: (seated l. to r.) J.L. Simonds, G.F. Carroll, P. Pleshko, R.E. Thoman; (standing, 1st row) I. Ohishi, I.F.

Chang, M. Ashikawa; (standing, back row) R.C. Knepper, K. Miyagi, B.J. Lechner, J.A. von Raalte.

### INFORMATION DISPLAY

JUNE 1982

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