
WATT'S CURRENT
AUGUST ISSUE, 1962
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HEWLETT-PAC

WATT'S CURRENT

Published Monthly by

HEWLETT-PACKARD COMPANY

Laboratory Instruments for Speed and Accuracy

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VOL. XVII AUGUST, 1962 NO. 8

-hp- Organizational Changes

Al Dossola, former supervisor, Billing and Accounts Payable Departments, is now supervisor, Administrative Services, covering Office Services, Mail Room, Cashier, Travel, and Payroll Departments.

Vin Lacoste, former supervisor of the Tabulating Department, is now supervisor over entire Data Processing area including Systems and Procedures.

Walt Moy replaces Vin Lacoste as Tabulating Department supervisor.

Ron Buehner is taking over duties as supervisor of the Systems and Procedures Department.

John Jenke returned to -hp- Inventory Control after a five-month training program at Paeco.

John Lark, Ernest Riberdy, Otto Ackerman, and Harold White transferred to the Loveland Division.

This Month's Front Cover...

. . . features a striking view of "Easy Street" in the Los Angeles Sports Arena where H-P's corporate family, including Moseley, Boonton Radio, Dymec, Sanborn, Harrison Labs, and PAECO, showed their products to more than 46,000 engineers at WESCON for 1962.

The grouping of the H-P affiliates on one aisle at the Show gave the visitors an opportunity to see and learn about all the H-P group's complementary test and measuring instruments and systems in one integrated "shopping center." To visually tie the group together, and to provide our customers with a brief respite from the concrete floor, the whole 90 feet of "Easy Street" was carpeted "wall to wall" right across the aisle.

Interest in our new products was gratifyingly high, and we were glad so many of our friends stopped by to see them.

August Features

From Our President's Desk

WHILE WE ALL spend a good portion of our time worrying about day-to-day problems, it is important, too, that we give some attention to our over-all direction. As we grow, it is necessary to anticipate what the future may demand of us and thus steer our growth so we will be better as we become larger.

One school of thought holds that a larger organization can be more efficient than one smaller. It points out that large-volume purchasing, large-volume production, and large financial resources almost automatically make for efficiency. In some cases this is indeed so, particularly when high volume in a single product is involved.

In our case, however, we are growing because we are adding a variety of products to our over-all instrumentation line. The volume of any one product does not increase a great deal. Furthermore, each product is a complex device requiring the utmost skill in design, manufacture, and test. Its production cannot entirely be reduced to a routine procedure.

It is this situation which has induced us to move in the direction of divisionalization, because we are confident we can do a better job by giving relatively small groups of people responsibility for a group of related instruments. This enables each group to solve its own special problems without undue control or direction from a central point.

In this type of organization there are always some people who strive for uniformity. In part, this comes from the human tendency to say, "If you don't do it my way you must be doing it wrong."

We believe our experience thus far clearly demonstrates the merit of divisionalization. We are going to continue to move in this direction and, in fact, plan to further strengthen responsibility at the divisional level and reduce the amount of control from central headquarters. This will diminish the volume of paper work which, in some cases, has reached overwhelming proportions and is forcing some of our people to be readers instead of doers.

We hope to work with many of you during the coming year to refine and strengthen our divisionalization program. We particularly want to encourage more use of individual effort and common sense. By so doing, I am sure we can achieve a substantial improvement in our over-all performance.

David Packard

HEWLETT-PACKARD SALES, EARNINGS UP FOR FIRST NINE MONTHS

HEWLETT-PACKARD sales and earnings for the nine-month period ended July 31 ran well ahead of the corresponding period of fiscal 1961.

According to the nine-month operating figures just reported by President Dave Packard, consolidated sales totaled $80,154,000. This represented an increase of 26% over 1961 sales of $63,416,000.

Packard noted that incoming orders continued strong during the third quarter, bringing the total of orders received during the first nine months to $84,029,000. This compares with $65,930,000 for the corresponding period a year ago, an increase of 27%.

Earnings for the first nine months totaled $5,024,000. These were equivalent to 44 cents per common share on 10,741,145 shares outstanding after provision for dividends applicable to preferred shares. This compares with 37.9 cents a share on 10,647,691 shares for the corresponding period in 1961.

Packard pointed out that the company's operating profit showed a marked improvement during the third quarter.

"At the end of the first six months of fiscal 1962 we were operating at a profit only 10% higher than the corresponding period a year ago," he said. "For the nine-month period of 1962, however, we were able to show a 17% gain over 1961. This improvement is primarily the result of a concerted effort on the part of all our operating units to achieve more efficiency and economy in their day-to-day operations."

Operations News

BY NOEL E. PORTER
Vice President, Operations

WE FREQUENTLY MENTION in this column our long-range plans for the organization and management of our growing corporation. Planning for the future is probably the most important single function of our corporate offices.

Dave's letter in this issue discusses a particularly vital part of our long-range plans—the trend toward divisionalization. He discusses the philosophy behind this trend and points out, in general terms, how it will enable us to do a better job of guiding the growth of our company.

We would like to outline some of the specific steps we are taking in this direction. At present, the corporate headquarters provides certain necessary corporate services and exercises over-all control of our entire operations. At the same time, some of the headquarters offices provide direct day-to-day operational functions for the parent divisions, including Microwave, Frequency and Time, Oscilloscope, and Loveland.

More Responsibility for Divisions—

We plan to put more and more of the responsibility for day-to-day operations into the parent divisions so that eventually we will have fully integrated operating centers at the Stanford complex, the Palo Alto complex, Loveland, Colorado Springs, et al. It is our intent that ultimately the corporate offices will be held to a lean, tightly knit and highly knowledgeable group. Its function will be to monitor the activities of the over-all corporation and to provide those services which are specifically of a corporate-wide nature. These would include such functions as corporate finance, marketing coordination, corporate advertising and public relations, advanced research, plant engineering services, and corporate-wide communications.

The divisionalization approach maintains a large measure of the small-company atmosphere and promotes the broader aspects of management and manpower development by delegating responsibility and authority.

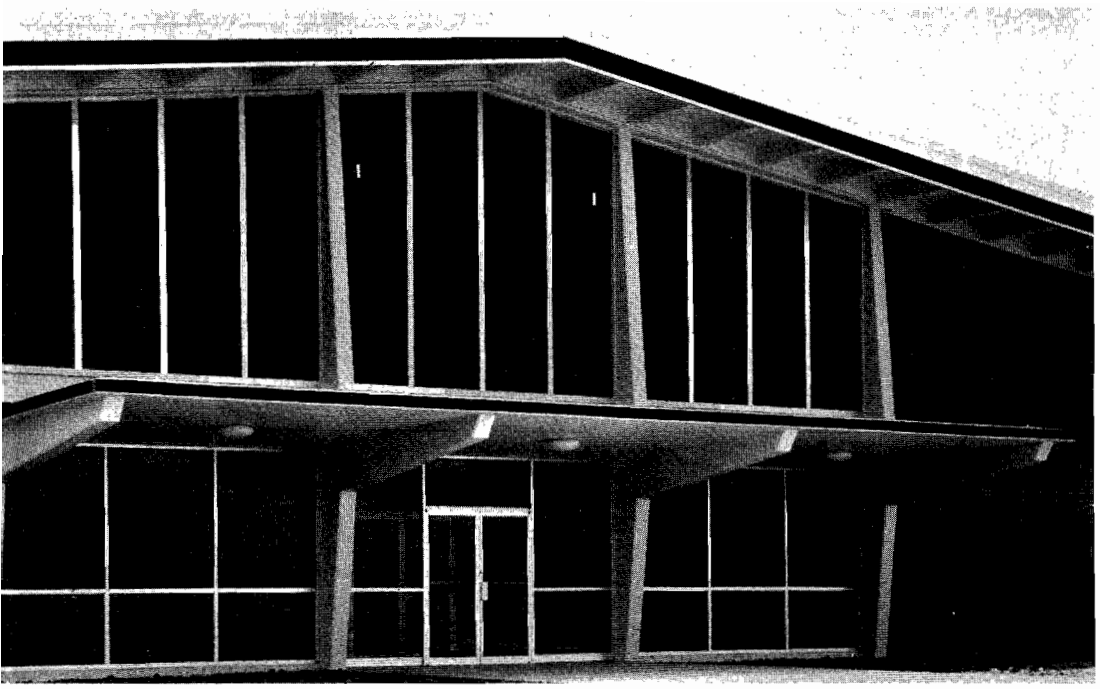
Importance of Financial Data Conformity—

While we intend to maintain a high degree of autonomy and authority at the divisional level, there are certain areas, of course, in which conformity to corporate standards is not only desirable but essential. One of the most important of these areas is that encompassing accounting and financial procedures. So that our financial people can all "speak the same language," we have developed over the past few years a standard chart of accounts and uniform procedures for reporting monthly statements for all operations.

We are also currently engaged in the second corporate-wide finance seminar here in Palo Alto. These seminars, the first of which was held last year, are attended by key financial people from all divisions and affiliates. The importance of these meetings is clearly indicated by some of the principal topics on this year's agenda:

1. *Corporate financial policies and organization.*
2. *Refinements in chart of accounts and reporting formats.*
3. *Requirements for consolidating financial information for reporting to management and stockholders.*
4. *Intra-corporate charges and billing for the transfer of parts and services between operating units.*
5. *Establishment of financial targets for all operating units.*

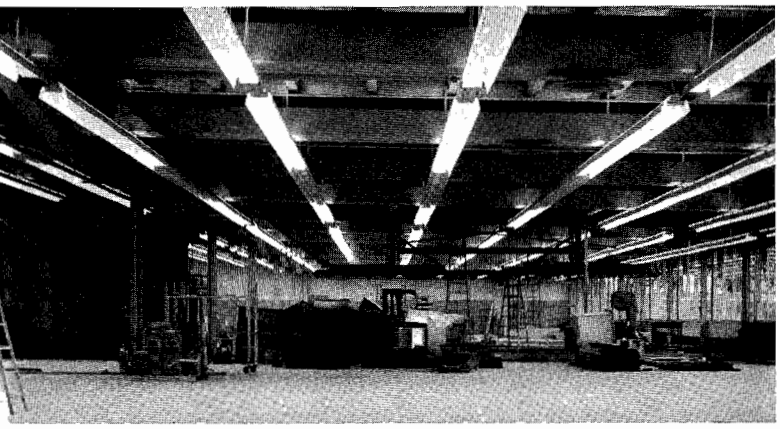
These seminars are an effective means of improving our accounting methods and procedures and will, over the months and years, enable us to do a better job of managing our complex business.



H-P's new research and manufacturing facility in Loveland, Colorado, will provide a major production source for H-P's audio-video line. The striking architectural design was conceived by the Palo Alto firm of Clark, Stromquist, Potter & Ehrlich, with final plans turned over to Moore & Bush of Denver, Colorado, for execution.

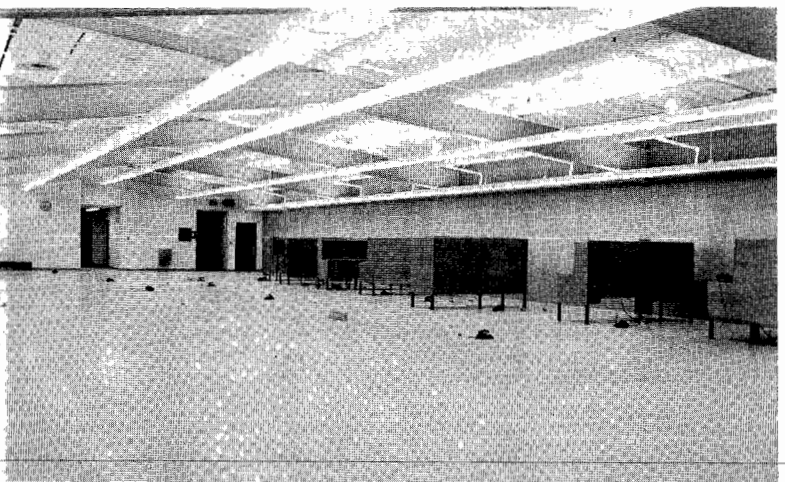
LOVELAND PLANT DEDICATION SLATED FOR OCTOBER 13

H-P Open House For Area Citizens--



Production area, above, with paint oven and brite-dip tanks shown being installed in -hp's- ultramodern plant of 140,000 square feet located in South Loveland Industrial Park.

Interior view of new Loveland building. The first department to occupy the new unit will be the research and development group, whose lab benches are shown below in process of installation.



CONSTRUCTION CREWS are rapidly putting finishing touches on Hewlett-Packard's new research and manufacturing facility in Loveland, Colorado. The plant will be formally opened October 13 when a group of distinguished Colorado officials, headed by Governor Stephen McNichols, join top -hp- executives in a morning dedication ceremony. The ceremony will be followed by an open house to which all citizens of Loveland and neighboring communities will be invited.

The new 140,000-square-foot plant, located in South Loveland Industrial Park, is the company's largest single building anywhere in the world. Its length is 400 feet—longer than a football field—and it is 290 feet wide. Additional space is provided by a mezzanine floor in the middle of the building.

With the eastern edge of the Rockies serving as a majestic

Stan Selby, left, general manager of Hewlett-Packard's Loveland Division, accepts plaque from William Green of Radio Station KLOV for "The Hewlett-Packard Hour," voted the most outstanding public service program in the state of Colorado.

backdrop, the plant is considered one of the most attractive industrial facilities in Colorado. It has brick walls on the east and west, with the north and south sides being composed of tinted glass. The entire structure is covered by a graceful peaked roof. This roof is designed to withstand 100-mile-per-hour winds and a downward pressure of 30 pounds per square foot, equivalent to approximately 14 feet of wet snow.

Stan Selby, general manager of the Loveland Division, estimates that the new building will eventually house some 700 employees. Present Loveland employment is approximately 350. Long-range plans call for the construction of two additional buildings and an eventual employment of 2,000.

Construction of the Loveland facility began in July 1961. To prepare the 84-acre site, building crews had to move some 80,000 cubic yards of earth. This necessitated blasting more than 300 cubic yards of shale rock.

Although the plant will not be officially dedicated until next month, several groups of employees have already moved into the new structure from the interim Loveland plant. This latter facility of 32,000 square feet will be converted to the production of transformers, resistors, and molded parts.

The first department to move into the new building was Marco Negrete's research and development group. Since this initial transfer on August 11, some manufacturing sections have moved in and set up production lines. The over-all transfer from the interim plant has been carefully planned to minimize delays in production schedules.

Manufacturing operations in the new Loveland facility will be devoted primarily to -hp's- audio-video instrument line. This includes oscillators, voltmeters, power supplies, and amplifiers—all basic measuring devices with a broad range of applications.

The new plant provides Hewlett-Packard with a major productive facility and the state of Colorado with an important addition to its growing industrial strength.

H-P LOVELAND RECEIVES BROADCAST AWARD

Public Service Program Wins High Acclaim—

THE "Hewlett-Packard Hour," a weekly radio program sponsored by -hp's- Loveland Division, has received the Colorado Association of Broadcasters' 1961-62 award as the most outstanding public-service program in Colorato.

The award, a handsome plaque, was recently presented to Stan Selby, general manager of the division, and to William Green, president of Radio Station KLOV, Loveland.

The Hewlett-Packard Hour is an entertaining, informative program originated by Selby and Green to provide public-service features to the residents of Loveland and to acquaint them with Hewlett-Packard operations in the community.

The program consists of good music interspersed with public-service features and informative messages about the company and its employees. The public-service features include forums on community problems, live dramatic presentations by local high school students, performances by amateur and professional entertainers, and discussions of national issues.

Each program includes three brief messages about Hewlett-Packard. The first deals with the company's history, policies, and over-all operations. The second describes—in nontechnical language—the company's products and their various applications throughout science and industry. The third message consists of an interview with an -hp- employee concerning his work, his background and training, and about over-all employment opportunities in electronics.

The program is broadcast every Wednesday at 2:00 p.m. and repeated at 3:00 p.m. the following Sunday.

Listener response to the Hewlett-Packard Hour has been most favorable. Selby points out that the program is an effective and practical method of building rapport between the company and the community.

"We're extremely grateful to win the Colorado Broadcasters' award," he said, "and hope that the program will continue to strengthen our relations with Loveland and the surrounding communities."

WESCON EA
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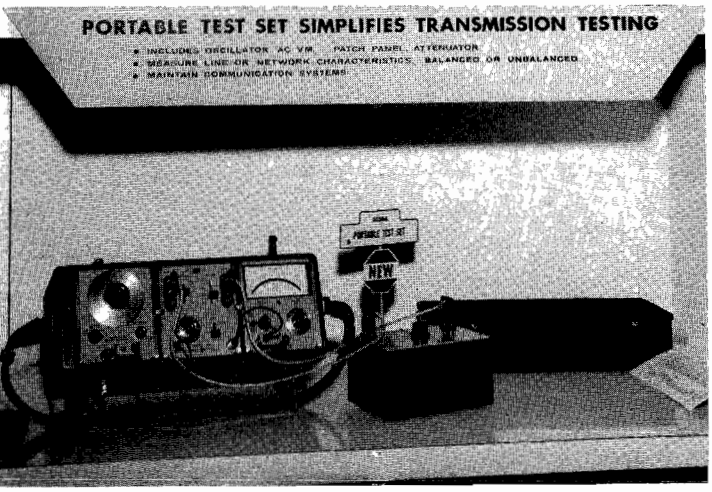
ARTISTICALL

Greatest Attendance Ever

Main floor, Los Angeles Sports Arena, scene of intense marketing activity for the -hp- corporate family here grouped on Easy Street at 1962 WESCON.



Newest contribution from Loveland—3550A portable test set for telephone transmission-line testing.

HEWLETT-PACKARD, Harrison Labs, Paeco, F. L. Moseley, Dymec, Boonton Radio, and Sanborn were all one-week neighbors on the softest street in Los Angeles last month.

The plush and comfortable avenue was "Easy Street"—a carpeted aisle on the main floor of the Los Angeles Sports Arena. The occasion was WESCON, the annual Western Electronic Show and Convention, which leapt off its starting blocks August 21st and, like a four-minute miler, came to an exhausted halt on the 24th.

Exhibit booths of the -hp- family of companies were located on both sides of the 90-foot Easy Street. Rather than consisting of seven unrelated and scattered booths, the exhibit represented an integrated unit offering a wide variety of electronic measuring instruments and systems.

Judging by the enthusiastic comments of WESCON visitors, the Easy Street theme was a smashing success—both artistically and commercially. Many visitors expressed the opinion that Easy Street was the busiest thoroughfare at the show.

The theme was carried out in several ways, the most dramatic of which was an attractive and durable carpet expertly laid by

Huge "King" van parked across street from Los Angeles Sports Arena served as portable billboard in full view of WESCON visitors.

SY STREET
SUCCESS BOTH
Y AND COMMERCIALLY

Floats, Inc., of Los Angeles. In addition to relieving weary feet (the sighs were almost audible), the carpet admirably fulfilled its primary purpose—to lend a sense of unity to the -hp- family of exhibits.

The theme was featured in pre-WESCON promotional literature mailed to 76,000 customers and prospects throughout the United States. It also provided a colorful, eye-catching sales message on -hp- billboards strategically located in the downtown area. As an added promotional boost, a billboard sheet was fastened to each side of the huge van which transported the -hp- exhibit to Los Angeles. Parked across the street from the arena, the van served as a portable billboard in full view of most WESCON visitors.

Speaking of visitors, these were around in abundance. According to official WESCON figures, the show set an all-time attendance record of 46,148.

The Hewlett-Packard booth, a 60-foot affair, was manned by 30 people from Palo Alto and Loveland. Working on a three-shift-a-day basis, these people were supplemented by a hard-working crew from Neely Enterprises. As always, Neely also provided a large helping hand to the Sales Promotion Department in accomplishing many of the important details connected with the show.

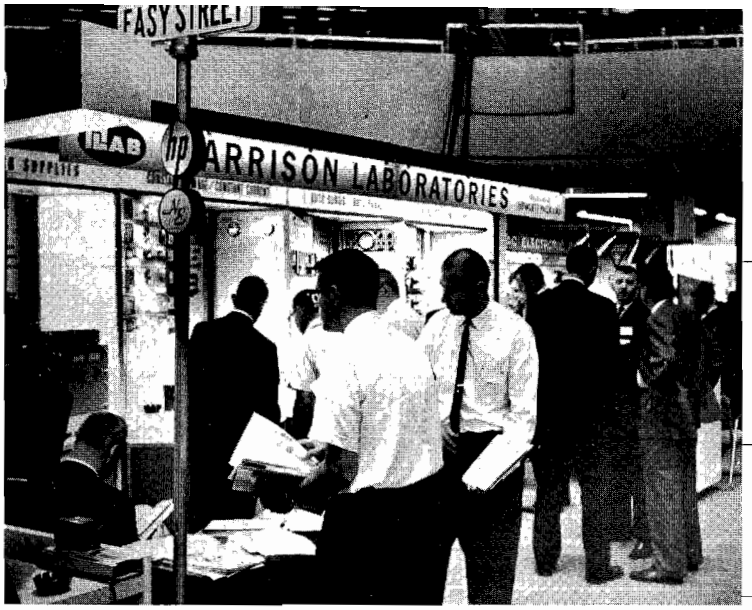
Instruments which seemed to attract the most attention in the -hp- booth were the Model 175A oscilloscope and the 5245L counter. Other instruments shown for the first time at WESCON included the 130C oscilloscope, 8614A signal generator, 8714A modulator, 431B power meter, 403A voltmeter, 3550 portable test set, 3400A RMS voltmeter, 310A wave analyzer, 241A push-button oscillator, 5251A converter, 5243L counter, 5233 counter, and the 5211A and B counters.

The -hp- loan program, administered by Carl Anderson of Sales Promotion and Milo Pitcher of the Service Department, was again a successful promotional endeavor. Using a rented electric car, Carl and Milo delivered 157 -hp- instruments to other exhibitors and also serviced this equipment throughout the show.

In addition to product exhibits, WESCON featured a full schedule of technical meetings and conferences, most of which were held at the Statler-Hilton Hotel. Barney Oliver, vice president of research and development, participated in a panel discussion on methods of reviewing technical papers submitted for presentation at major conventions. The panel also covered technical program organization, content, and method of presentation. Dick Reynolds, domestic sales manager, joined other members of the Electronics Sales Managers Association in a panel discussion on the distribution of electronic products.

On the final day of the show, WESCON played host to several government officials, including Governors Pat Brown of California and Paul Fannin of Arizona. Following a luncheon, the governors were escorted on a tour of WESCON exhibits.

Since the Sports Arena could not accommodate the entire 850 exhibitors, many of them were housed in what is believed to be the world's largest—and warmest—tent. The tent, 740



Typical scene in Harrison Labs booth as customers obtain latest information on DC power supplies.

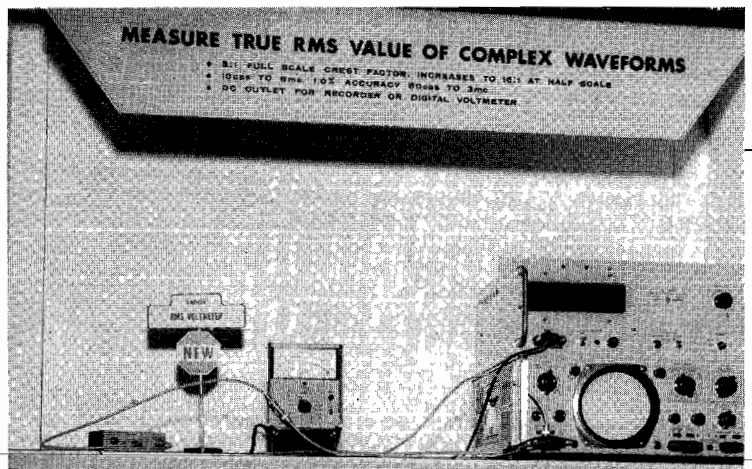
feet long, was erected outside the arena at a cost of some $23,000.

To provide additional, permanent exhibition facilities, it has been proposed that an underground hall be constructed adjacent to the Sports Arena. This hall would be useful not only for WESCON but also for other major conventions and trade shows in Los Angeles.

Meanwhile, back in Palo Alto, -hp's- sales promotion group is already making plans for next year's show—proving that there's no rest for the weary. The 1963 WESCON will be held, as it is every other year, in San Francisco's Cow Palace.

Pushbutton-controlled microwave signals, amplified and modulated, are shown on new 175A 'scope.

Newest from Advanced R&D—the 3400 RMS voltmeter that gives the DC power equivalent of complex waveforms.



DYMEC SHOWS NEW 2010D AT WESCON

A New Offering in Digital Systems Field

THE DYMEC PORTION of Easy Street drew an unusually enthusiastic crowd. A heavy pre-show promotional program stimulated interest in the display, and the lure of many new instruments and systems (a large percentage shown for the first time), combined with the soft floor carpeting, held visitors in the booth. Many booth visitors appeared to be "buying types."

Dymec's brand new standard digital data-acquisition system, the DY-2010D, was accepted with high interest. This system represents something new in its field, offering a high-speed, multiple-point scanning, measuring, and recording capability with system flexibility plus the advantages of low price, high dependability, and short lead time.

The DY-2401A Integrating Digital Voltmeter was demonstrating its common mode noise-rejection capabilities, and the display drew many potential customers. By demonstrating that a millivolt-level DC voltage can be measured accurately with 110 volts 60 cycle AC superimposed on the signal, visitors were given a taste of the outstanding capabilities of this amazing new measuring instrument.

Many people interested in instrumentation amplifiers were introduced to the new DY-2460A. This all-solid-state unit features a photoconductor chopper and offers high performance in a compact package. Six amplifiers fit in a 7-in. modular case, or they may be used individually on the bench.

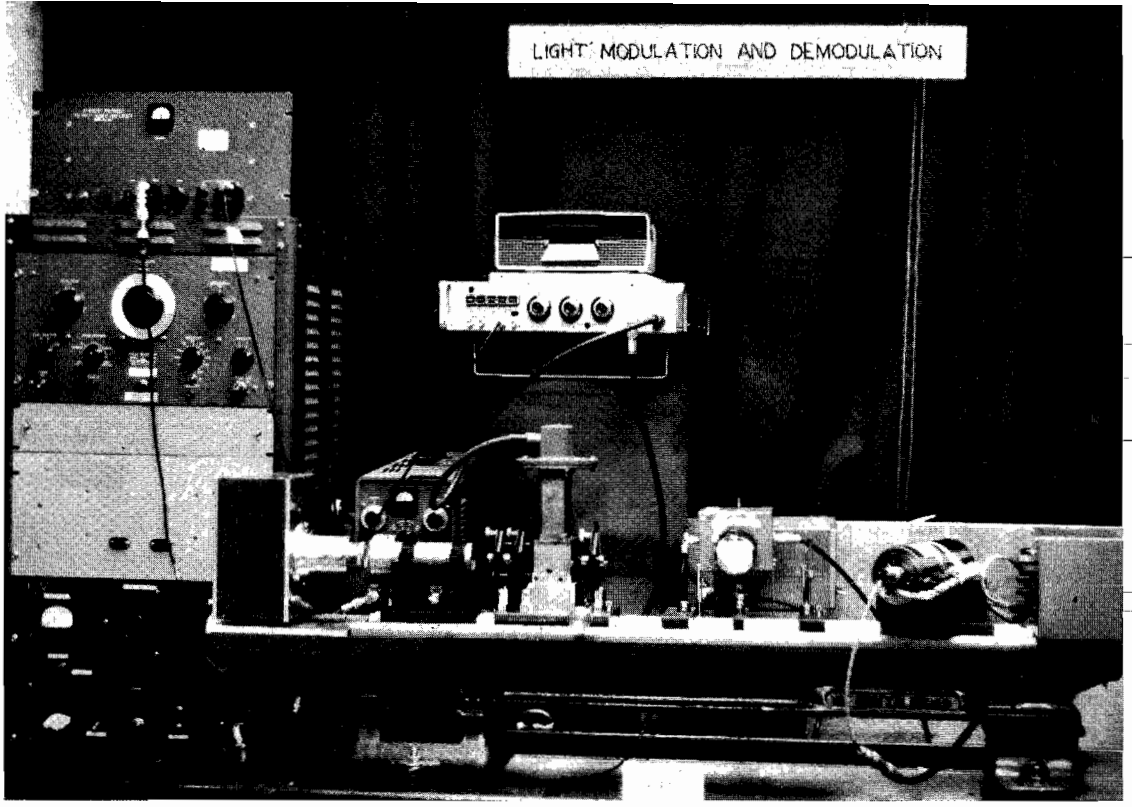
The DY-2650A Oscillator Synchronizer was shown precisely locking two X-Band microwave sources to within a few cycles of each other with a stability of a few parts in 10^8.

Data-processing customers were given a demonstration of the DY-6575 Plotting System, which was in action converting information on digital magnetic tape into continuous, smooth X-Y plots.

The brand new DY-2365A VLF Phase Comparator demonstrated the simplicity of calibrating local frequency standards directly to national VLF broadcasts. An antenna on the roof of the Sports Arena received broadcasts from a VLF station in the state of Washington and plotted the phase difference between this standard and an -hp- 103 Oscillator in the booth.

The WESCON show was definitely a success. According to Ed Morgan, "This year's WESCON was the best we have participated in from the standpoint of quantity and quality of customers. We attributed this to good pre-show promotion, new instruments and systems, and our being grouped within the -hp- family."

Dymec's DY-2010D Data Acquisition System was introduced at WESCON, and was received with high interest. In addition to the DY-2401A Integrating Digital Voltmeter, new instruments in the system include a guarded 600-point crossbar scanner, the DY-2911A/B, and a high-speed tape punch set, the DY-2545A/B. The 2010D permits accurate digital measurements of DC inputs from a few millivolts to hundreds of volts. It offers high common mode rejection of all noise frequencies through floating and guarded measuring circuitry, and an average-reading characteristic minimizes the effects of noise superimposed on the measured signal. Information is recorded on punched tape at a rate up to ten channels per second, and the record includes channel identification and measuring range in addition to the numerical data.



Demonstration conducted in Stanford Electrical Research Lab points up application possibility of light modulation with microwave subcarrier.

MICROWAVE MODULATION AND DEMODULATION OF LIGHT DEMONSTRATED AT STANFORD UNIVERSITY

H-P 8714 Microwave Modulator Plays Part in Novel Demonstration With Far Reaching Implications—

DURING AUGUST of this year Stanford demonstrated the feasibility of modulating light with a microwave (2700 mc) sub-carrier, with the 2700 mc being modulated with music. This microwave signal was used to modulate a light beam which was then detected and its music information amplified and played back through a speaker.

In order to achieve an S-band signal which is amplitude modulated, the amplified output of a record player is fed into an -hp- 8714 microwave modulator thus causing the attenuation of the transmission line in the 8714 to vary according to the music. Then an S-band signal is passed down the transmission line so that it becomes amplitude modulated by the music. This AM modulated signal excites an S-band cavity which contains some potassium dihydrogen phosphate (KH_2PO_4). The signal strength in the cavity and KH_2PO_4 is therefore also amplitude modulated.

An explanation of the light transmission relies heavily on an understanding of circular and elliptical polarization. Consider light as an electromagnetic wave with an E field pointing in a certain direction in the x-y plane and the direction of propagation is in the z direction. Suppose that E points at a 45° angle with respect to x axis (this can be achieved with prisms). Then suppose that the light passes through a device which delays the x component of E by 90° more than it delays the y component, i.e., it takes the x component a quarter-cycle longer to get through the device than the y component. Now, at any point in the light path when E_x is at a maximum, E_y is zero and vice versa. If the resultant of E_x and E_y (call it E_r) is observed at succeeding times, E_r no longer always lies at 45° but will trace out a circle in the x-y plane. If the magnitude of E_x and E_y is not equal, E_r traces an ellipse instead of a circle. This is circular and elliptical polarization.

In this experiment, light from a mercury arc lamp is polarized at 45° and passed through a quarter-wave plate to achieve circular polarization. The light then passes through the S-band cavity with the KH_2PO_4. This substance changes the relative magnitude of E_x and E_y in accordance with the microwave field strength across the KH_2PO_4. The light is therefore elliptically polarized. The major axis of this ellipse oscillates about the x axis at an S-band rate. How far from the x axis the major axis moves is determined by the strength of the S-band signal, which in turn is determined by the music. The light is then passed through another prism which only allows the E_x component of the wobbling ellipse to pass. E_x is amplitude modulated at S-band rates with the music governing the strength of the amplitude variation. Thus the light is amplitude modulated by a microwave carrier.

Demodulation begins in a traveling-wave tube with a light-sensitive cathode. The variations of the magnitude of E_x cause the cathode to change the number of electrons emitted in a similar manner to the variations in magnitude of E_x. The varying density of electrons generates an S-band wave on the helix of the tube. This wave is then detected, amplified, and played through a speaker.

Looking into the future, there is no apparent reason why many microwave signals could not simultaneously operate on a light beam in a similar manner. Each microwave channel could contain its own information-handling capability, and the light could carry the sum of all the information capabilities.

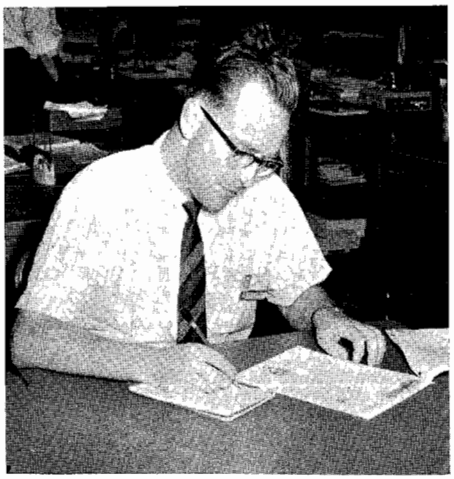
This work is being done at Stanford by A. E. Siegman, B. J. McMurtry, and S. E. Harris. It is sponsored by an Air Force contract.

—Nick Kuhn

THE BARCELONA FAIR, held earlier this year, was a great success, with attendance and sales at an all-time high, according to Justo Montero (right), HPSA's Spanish distributor. Montero reports that H-P's 160B was displayed and generated considerable interest along with the 175A. To Justo's right is Julio del Olmo, Hewlett-Packard representative for Cataluna.

International News

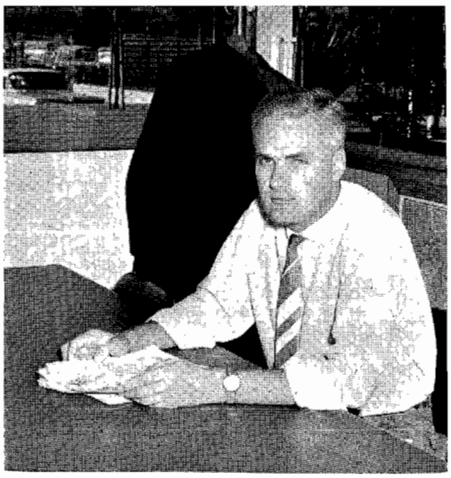
HUGH SMITH



Hugh Smith and his wife, Cynthia, arrived last weekend for an extended training period with the Hewlett-Packard Service Department. Hugh, on his return to England, will become service manager of Hewlett-Packard Ltd.

Prior to joining HPLTD in May of this year, Hugh spent five years with G. and E. Bradley, an English firm specializing in military electronic development engineering. From May until August, Hugh was involved in testing the -hp- 606A which has recently been placed in production at HPLTD. Hugh says he appreciates very much being able to "cut his eye teeth" on the 606A and feels that this experience, plus the information provided by the Americans working at HPLTD, has given him a fine introduction to H-P and our methods of doing business.

WOLFGANG OHME



Wolfgang Ohme, manager of Engineering for Hewlett-Packard GmbH, has been with the firm since the first of the year. Prior to his association with HP GmbH, Wolfgang spent four and a half years as assistant professor in the Technische Hochschule in Stuttgart, West Germany.

Wolfgang will be spending most of his two months' stay in the Research and Development area. During his visit, he is particularly interested in seeing how -hp- instruments are developed and feels that such an insight will aid him in his work of adapting -hp- instruments to the European market.

Prior to arriving at -hp- Palo Alto, Wolfgang spent several days at the WESCON Show. He said the grouping together of all the -hp- companies made quite an impression, and aided in bringing home to him the true breadth of the -hp- corporate product line.

Although Wolfgang was somewhat startled by rather cramped floor space and the hectic pace of the show's activities, he was particularly impressed by the displays of the large number of component manufacturers. He felt that the availability of such specialized components as eyelets, printed circuit boards and other items simplified the job of the U.S. design engineer. In contrast, German development engineers are required to spend a substantial part of their time designing these items as well as the circuits themselves.

GEORGE NEWMAN

Another visitor to H-P is George Newman, who, as most of you will remember, occupied a number of positions in the -hp- accounting department prior to his assignment to HP-LTD in September, 1961. While at HPLTD, George held dual responsibilities in both the accounting and material procurement areas. In July of this year, George and his wife, Sally, moved to Geneva, where George is presently HPSA's corporate accounting manager. His responsibilities at HPSA include internal accounting as well as supervision and consolidation of all subsidiary accounting information.

While in Palo Alto, George will attend the -hp- intercorporate accounting seminar. This seminar, held for representatives of the various -hp- corporate accounting activities, will feature an interchange of views regarding improved accounting methods and standardization of accounting procedure. George feels that this seminar, plus a subsequent one which will be held with the various European accountants in Geneva, will be invaluable in tying together our increasingly complex organization.

6TH NATIONAL CONFERENCE

PRODUCT ENGINEERING & PRODUCTION

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PROFESSIONAL GROUP ON PRODUCT ENGINEERING AND PRODUCTION

san francisco chapter

DETAILS ON THE TOPICS to be covered during the four sessions at the 6th National Conference on Product Engineering and Production, to be held in San Francisco on November 1 and 2, have been released by George Reyling, program chairman.

One of the speakers for the session on "Components, Processes and Equipment for Electronics Production" will be L. B. Stearns, president of Chemical and Aerospace Products, Inc., of Gardena, California. Mr. Stearns will discuss chemical milling for making lightweight, difficult-to-machine parts, chemical blanking for the production of close tolerance detail parts from thin or exotic metals, and chemical etching of preformed circuitry. Other subjects to be covered during this opening session of the Conference will be vacuum deposition techniques, miniature mechanical counterparts to micro-electronic circuitry, and particle identification and techniques for control of clean areas.

The second session will consist of a panel discussion on "Electronic Interconnection Techniques." Dr. L. Pessel, with RCA's Central Engineering, Defense Electronics Products, in Camden, New Jersey, will talk on the reliability of soldered connections from the viewpoint of the important parameter of solderability of the surfaces to be joined. An entirely new test will be described, which is rapid, simple, and significantly correlated with connection quality. Samuel A. Francis, vice president of The Sippican Corp. of Marion, Massachusetts, will make another of the presentations for this session on welding techniques, including laser, electron beams, controlled resistance, ultrasonic and cold pressure. A talk on microwrapped connections will complete the session.

The third session will be on "Man-Hardware Relationships." The important subject of protective packaging and handling of high reliability parts for the Space Age will be covered by Bronson B. Baker, manager, Packaging, Handling Engineering, and Conservation of Lockheed Missiles and Space Company in Sunnyvale, California. Other subjects include human engineering problems in assembly and application of microminiature packages, incoming test of miniature components, and automated instructions for product reproducibility.

The final session of the Conference will be on "Circuit Packaging." Elephantine electronics (very high power-high voltage equipment) will be discussed by R. L. Blessing, senior project engineer, and A. M. Poire, production project engineer, both of Radiation at Stanford in Palo Alto, California. Special problems are presented when transformers the size of a week-end cabin and capacitors as large as a railroad car must be packaged into an assembly. W. Dale Fuller, senior member of Lockheed's Research for System Microminiaturization in Palo Alto, California, will talk on integrated electronics and the production picture for the ultimate in miniaturized circuitry. Other subjects included will be application of dot components to a miniaturized circuit and circuit packaging with modern conventional components.

Luncheons will be held each of the two days of the Conference, with the one on November 2 featuring an interesting and thought-provoking talk on "Communication With Other Intelligent Species," by Bernard M. Oliver, Hewlett-Packard vice president for Research and Development. The luncheons and all activities of the Conference will be held at the Jack Tar Hotel in San Francisco.

Mr. Reyling is manager of Engineering Services for Varian Associates in Palo Alto, California. Other members of the committee for the 6th National Conference, which is sponsored by the San Francisco Chapter of the IRE Professional Group on Product Engineering and Production, include General Chairman Arthur P. Kromer, also of Varian Associates; Exhibits, W. Dale Fuller, of Lockheed Missiles and Space Company; Publicity, Olof Landeck, of Electro Engineering Works; Finance, Hugh D. Kennedy, of Granger Associates; and Arrangements, Vic B. Buell, of Hewlett-Packard.

For additional information contact Harmon Traver, Bldg. 4U, or Ron Church, Bldg. 3L, -hp- Stanford Plant.

"Small territory—bad year" is a lament often jokingly uttered by Tiny Yewell in the midst of the New England concentration of electronics activity. 1962 promises to set new H-P-Yewell Associates sales records in this area and in an effort to bring the message to even more customers, Tiny Yewell and senior field engineer Vince Yaras have hit on a novel approach—see poem and picture!

"Our 'Tech Cruiser' has been around for many years—
Same goes for these worn old engineers—
But—hell—'Sell Big' is our dying motto
As we chug around in our old auto.

And yet—in spite of brains and gear—
It seems to be 'Small territory—bad year' ".


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