

# MELPAR-A-GRAPH

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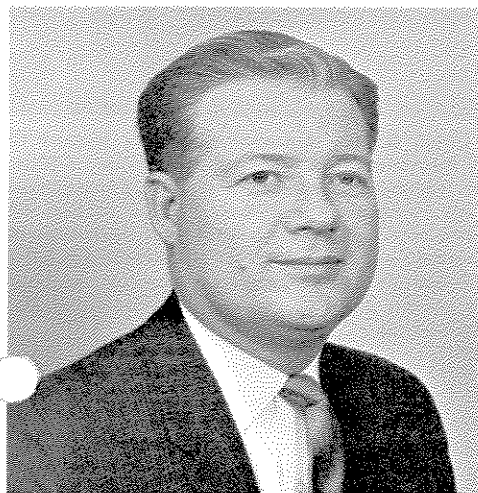
MELPAR, INC.

A SUBSIDIARY OF WESTINGHOUSE AIR BRAKE CO.

February 1965

## Hall Heads Microcircuit Manufacturing Division

The appointment of Joseph W. Hall as manager of the newly created Microcircuit Manufacturing Division of Melpar was announced January 29 by Kenneth E. Schreiber, Vice President for Manufac-



J. W. Hall

turing. Mr. Hall previously held the positions of Assistant Manager of the Minuteman Division and Manager of the Oklahoma City plant.

The Microcircuit Division will be responsible for all functions involved in the marketing, process development, manufacture, and test of printed circuit boards, multilayer boards, and thin-film circuits for in-house projects as well as for Melpar customers.

The new division will be located in Leesburg Pike plants 2 and 3. Many of the personnel and facilities for the division will be drawn from those used on the Minuteman program.

Mr Hall joined Melpar in 1953 as a design engineer. He later served as project engineer and as supervisor of the administrative staff in the Engineering Division. In 1960 he moved to the Production Division as Special Staff Assistant to the manager. In this capacity he was coordinator of production on the F-101B simulator program, a multimillion dollar project that involved the production of 21 simulators, plus test equipment.

## Company to Build Personal Communications System for Astronauts

### System to Use Thin-Film Circuitry Throughout

Melpar has been awarded a three-year contract to design and build a Thin Film Personal Communications and Telemetry System (TFPCT). The contract was awarded by the NASA Manned Spacecraft Center, Houston, Texas.

The unit is to be used by astronauts during activities outside the spacecraft. It will include both active and passive thin-film components. The technique of fabricating complete circuitry by the single process of vacuum deposition of materials has been termed "monotronics" by Melpar scientists.

The TFPCT will be a VHF/AM communications link between astronauts outside the spacecraft (the spacecraft serving as a relay) or between a single astronaut and the spacecraft. The design provides for seven channels of continuous data. The TFPCT has two independent modes of operation: the duplex mode, which allows simultaneous voice transmission and reception with an option for continuous telemetry, and the simplex mode, which is for voice transmission or reception. In its final design, the unit is expected to be 10 cubic inches in volume and weigh less than 10 ounces.

The vacuum-deposition techniques and production chambers to be used in forming the circuits were developed at the Physical Electronics Laboratory of Melpar, under the direction of Dr. Charles Feldman. These techniques are a result of five years of research supported by both Melpar and the Bureau of Naval Weapons.

The advantages of monotronic equipment, such as reliability, weight and volume savings, and extended frequency ranges, have convinced the Manned Spacecraft Center and Melpar of the desirability of the TFPCT program at this time.

## '64 Sales Total \$44.5 Million

Melpar had sales of \$44.5 million and net income of \$1.67 million or 67¢ per share during 1964, according to recently released figures. Neither sales nor net reached the record highs of \$65.8 million and \$1.9 million achieved during 1963.

According to President Edward M. Bostick, the decrease in sales was almost entirely attributable to a decrease in production of circuit boards for the Minuteman missile.

### R & D Business Up

The research and development business of the Company showed an increase in 1964, and its base was broadened by contracts in non-defense areas from customers such as NASA, National Institutes of Health, the Department of Health, Education and Welfare, and the Departments of the Interior and of Agriculture. In addition, Melpar is presently working with WABCO on some of the country's major mass transit programs.

Mr. Bostick also indicated that many of the programs that the company expects to initiate during 1965 are in the non-defense field.

## Cradlin Addresses NSIA Panel

William T. Cradlin, Chief of Publications, was a speaker at the Annual East Coast Conference of the Maintenance Advisory Committee, Technical Publications Panel, National Security Industrial Association, on February 4 in Washington.

Mr. Cradlin presented a progress report on NSIA Project VIII-3, of which he is the director. The project, entitled "Standard Specification for Format, Illustrations, Manuscript and Printing," would provide a "shopping list" of all acceptable methods, processes, formats, and techniques, from which a contractor could select any combination best suited to his needs in producing a technical publication that would meet contract requirements.

## SUPERVISORS' FORUM

This month Lawrence E. Shaw answers some questions on overtime pay and on life insurance that were recently asked him by supervisors.

**Q.** A non-exempt employee was absent sick on a scheduled workday but worked the following Saturday. He did not receive overtime pay for Saturday. Why is this?

**A.** Under the law a non-exempt employee must be paid overtime (1-1/2 times his basic rate) for all hours worked over 8 in a day or over 40 in a work week. While Saturdays and Sundays may not be part of a person's regular work week, they are not necessarily "overtime days," automatically entitling the employee to overtime pay. Regardless of when the employee works, he is entitled to overtime pay only when he has worked more than the hours cited above. Time absent sick or on vacation cannot be counted as time worked.

However, Melpar goes beyond the law's requirement in one case: in a week in which a paid holiday occurs, overtime is paid for all hours worked in excess of 32.

**Q.** Under the group insurance plan, an employee's contribution and his life insurance benefit are determined by his annual base earnings. However, regardless of the date he moves from one earnings class to another, the change in his payroll deduction is not made until February 1 next following. In the interim, which class of life insurance benefits pertains to him?

**A.** That applicable to the deduction prior to February 1. His benefit changes when his deduction changes.

**Q.** At the time of taking group insurance, an unmarried employee named a parent as beneficiary for life insurance benefits. He has since married. Did his wife automatically become his beneficiary?

**A.** No. "Beneficiary" and "dependent" are not like terms. If he wants his wife to receive the life insurance, he should immediately execute a change-of-beneficiary form, copies of which are available in Personnel.



**LETTER OF APPRECIATION.** John H. Adams, Chief, Quality Assurance Branch, Robert C. Melton, QA Assistant, and Calvin B. Christian, QA Representative, of the Melpar Plant Office, Defense Contract Administration Services Region, recently received a letter of appreciation from the Air Systems Division, Wright-Patterson Air Force Base, for their service during the period September 21-October 12 of 1964. The three men directed the efforts of personnel of the Melpar Plant Office in expediting the inspection, acceptance, and shipment of QRC equipment built by Melpar to support exercise "South Shores." Maj. Raymond P. Barnes, USAF, Officer in Charge, Melpar Plant Office, is shown above presenting the letter to Mr. Adams, while Mr. Melton and Mr. Christian (at right) look on.

## Tiny Package Could Reveal Life on Mars

The age-old question of whether life exists on Mars may be answered in the next ten years.

Under a \$275,000 contract with NASA, Melpar is now engaged in the development of a system to determine whether life exists now or has existed in the past on our neighboring planet.

Hopeful that the system can be fabricated early enough to be incorporated in a "Voyager" flight in 1971 (a favorable launch time), scientists of the Biological Detection Section, Research Division, are already at work on the prototype model. Dr. Ira Blei heads the section.

By passing a beam of polarized ultra-violet light through a solution in which a sample of soil from the surface of Mars has been dissolved, and analyzing the direction and amount of polarization, determination can be made as to whether life exists now or has existed in the past. "Life," of course, may be of the lowest form of plant life as we know it here on earth; however, merely knowing that the Martian environment is capable of supporting life in any form will be extremely important in planning future manned space probes.

## GOING UP!

We're happy to report the following promotions:

Leon Bademian to Consulting Project Engineer, Robert J. Breinig to Principal Engineer, Martin J. Donohoe to Senior Physicist, and Robert D. Sadler to Junior Electrical Engineer.

Congratulations!



"Your mistake cost the company \$125,000, Murgatroyd; so stop referring to it as a boo-boo."

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## SOLAR ENERGY APPLICATIONS LAB ESTABLISHED

Melpar this month established a Solar Energy Applications Laboratory within the Space Sciences Research Center of the Research Division. Named to head the laboratory is Dr. Maria Telkes, an international authority on solar-energy conversion.

The establishment of the new unit follows more than two years of research at Melpar on possible applications of solar energy. Out of the investigations have come such developments as solar-powered thermoelectric devices, solar-powered water-distillation systems (see article on solar still, January *Melpar-a-graph*), and advances in survival technology.

The new laboratory will be the focal point of the Company's expanding activity in the field of solar-energy conversion and its application on earth and in space.

### Dr. Telkes: Prime Source on Prime Source

Dr. Telkes is world renowned for her work in converting the energy of the sun, the prime source of energy on earth, to

man's use. References to her work dot the pages of scientific literature in almost as many languages as one can name. Besides, she has herself written voluminously on thermoelectricity, solar distillation; and solar heating and storage. She also has about 20 U. S. patents on solar-energy devices, in addition to European patents.

Harnessing the energy of the sun has been the ruling interest of Dr. Telkes' life since she was a schoolgirl in Hungary. All her study at the University of Budapest, from which she received the Ph.D. in physical chemistry, was shaped by this interest. From it also stemmed her decision to emigrate to the United States. Believing that the most advanced work in her field was being done in this country, she took an appointment as a Research Associate at Massachusetts Institute of Technology.

She spent seven years at MIT. Among her contributions was a solar still, for life rafts, that was used extensively in World War II. She also designed the energy conversion and storage system for



Dr. Maria Telkes with solar cooking oven that can bake, roast, or cook any food. She developed it for countries with much sunshine but little in the way of fuel resources.

the first house ever to be heated only by solar energy. The house, called the Dover house because it was in Dover, Mass.,

(Continued on Page 4)



**IMM PLANNING SESSION.** This group met at the Falls Church plant January 26-28 for Integrated Maintenance Management (IMM) planning in connection with Melpar's development of the A-7A Weapon System Trainer. From left to right, front row: W. Flitter, United States Naval Training Device Center (NTDC); Lt. (j.g.) A. Hall, Fleet Aircraft Electronic Training Unit, Pacific; J. Vindett, Cdr. D. Phillips, and F. Smith, NTDC; A. Friedlander, Melpar; F. Mangin, NTDC; C. Tully, Fleet Aircraft Electronic Training Unit, Pacific; and M. Governale, NTDC. Back row: R. Roreen, Melpar; F. Leonhardt, NTDC; E. Birkhead, Melpar; C. Christian, Defense Contract Administration Services; B. Cagna, NTDC; K. Clark, Electronic Supply Office; A. Rivenbark, NTDC; E. Pulsifer, A. Plait, E. Hall, and H. Campbell, Melpar; and J. Winnett and S. Weber, NTDC.

Integrated Maintenance Management is a new concept in weapon system development. Its objective is to improve the fleet effectiveness of weapon systems by careful analysis of every step of design and development to ensure ease of maintenance. Cdr. Phillips is chairman of the IMM team, and Mr. Friedlander is chairman of the Melpar IMM group.

## Melpar Host To ASQC Group

Members of the Washington, D. C., Chapter of the American Society of Quality Control were briefed on Melpar's Reliability and Quality Control activities and facilities on the evening of February 17.

Assembling in the Falls Church plant, the ASQC members were welcomed by Leonard J. Blumenthal, Manager, Reliability Department. They then heard three papers presented by members of Melpar's R & QC Directorate: "Melpar's Reliability Approach," by Alan O. Plait; "Quality Control Through a System of Standards," by Donald E. Lewis; and "Operation of Melpar's Calibration and Control System," by Frank L. Carau.

After an intermission, the Society members were taken on a tour of the Metrology Laboratory, in the Falls Church plant, and then on a tour of the new Test and Evaluation Laboratory, in Ravensworth Industrial Park, Springfield, Va.

## Reed Retires

Edward W. Reed, group leader in Receiving, Falls Church plant, retired February 1 after nine years with Melpar. Mr. Reed plans to remain in the Washington area.





**UP AND AWAY** goes the biggest piece of environmental test equipment to be transferred from the Falls Church plant to the new Test and Evaluation Laboratory in Ravensworth Industrial Park, Springfield, Va. It is the Tenney Stratosphere Chamber, a walk-in chamber than can simulate a variety of conditions of temperature, altitude, and humidity.

Test equipment was moved from Falls Church to the Ravensworth location over a period of several weeks in January. Plant Engineering is now putting the finishing touches on the interior of the new building, but lab manager Eli Parrish and his staff are already installed in their offices and test areas.

Photo by Glittenberg

## "E"asy Way to Education

Wondering how to finance a college education for your child? Series E Savings Bond may be your best bet. Consider these facts:

If you start a program of investing \$18.75 per month in E bonds when your child is six months old, the value of those bonds with interest will be \$5480 when he is 18. Even an eight-year-old will have \$2689 in his college fund at 18 if you begin investing \$18.75 a month now; and if you can make your investment \$37.50 a month, he will have \$5378 when he's ready for college.

Another advantage in using U. S. Savings Bonds to provide education funds for your children is the tax benefits. If the bonds are purchased in the child's name, either alone or with a parent named as beneficiary, they become an outright gift from parent to child. The income tax liability can usually be shifted to the child by filing a Federal return in his name at the end of the first year of bond purchases, listing the increase in bond value as income to him. This initial return establishes the intent, and no

further returns need be filed as long as the child's annual income is less than \$600; and no tax will be due if the bond interest, plus other income, comes to less than \$900 (\$600 personal exemption plus \$300 standard deduction). Assuming that the child never exceeds this \$900 income figure in any year, the total interest accruals on his bonds will be tax-free when he cashes them for his education.

Sound like a good plan? Savings bond authorization cards are available in your Personnel office.

## Solar Energy Lab (Continued from Page 3)

made a big splash in newspaper supplements and other popular literature, as well as in scientific journals.

Dr. Telkes left MIT to organize a solar energy laboratory at New York University. For five years she was project director of the laboratory, and during this period, continued her work on solar ovens, stills, and heaters; thermoelectric materials; and Peltier-effect cooling devices.

From NYU, Dr. Telkes went into industry. Before joining Melpar she served as Director of Research of the Solar Energy Laboratory of Curtiss-Wright Co. and as Director of Research and Development of Cryo-Therm, Inc.

## Let's Cerebrate!

Think, that is.

We're inviting you to put your brain (or *cerebrum*, as the Romans called it) to work on the questions below.

Each question is designed to pinpoint an area in which the materials you use, or the way they are handled, may be open to improvement.

If you answer No to any question, start cerebrating in earnest. Maybe you and you alone will be able to see a better way to do things.

1. Are your materials available when needed?
2. Is the materials storeroom maintained in an orderly manner?
3. Are materials moved in the most economical manner?
4. Are materials properly protected when being moved?
5. Are your materials ready for use when you receive them?
6. Are they the proper materials for your work?
7. Are they uniform and of standard quality?
8. Do you receive the most economical material?
9. Do you receive the needed amount of material?

Got an idea? Great! Next step is to report it on a VIP suggestion form (Form GO-340). You can pick up a GO-340 at your nearest VIP display board. There's one close to every employee entrance of every Melpar building. Instructions on the form tell you where to send it when it is completed.

Remember, no saving is too small to be reported. And any suggestion that is accepted and implemented makes you eligible to compete for the 1965 Melpar Value Improvement of the Year award.

## Eight Have Suggestions Accepted

The names of Maurice F. Allen and Roy S. Boreen were recently added to the list of employees who have had VIP suggestions accepted and implemented.

The following employees, already on the list, had additional suggestions accepted: Clifford W. Ford, Virginia MacMinn, H. Fenn Sykes, and Irvin B. Tiedemann.

Among the honors that have come to Dr. Telkes are the first achievement award ever given by the Society of Women Engineers; an honorary Sc.D. and an invitation to address the First NATO International Seminar on Applications of Solar Energy, which was held in Greece.

WATS the answer? Don't call us. We'll call you—on WATS!