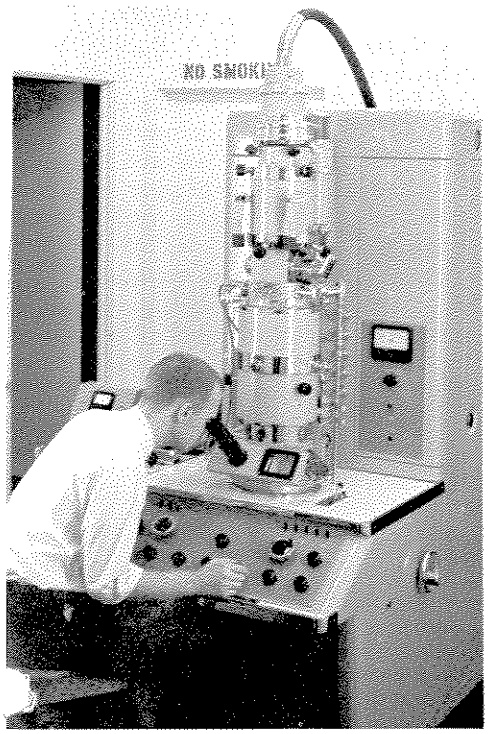
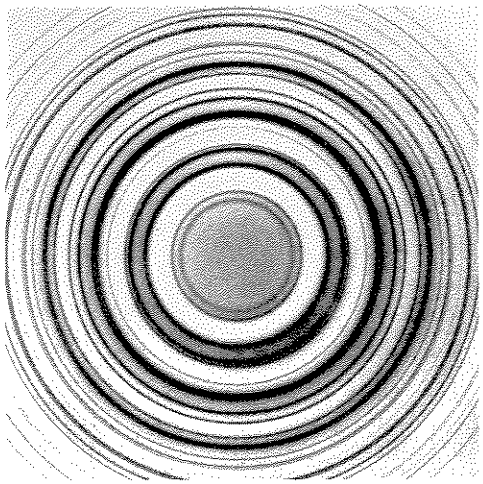
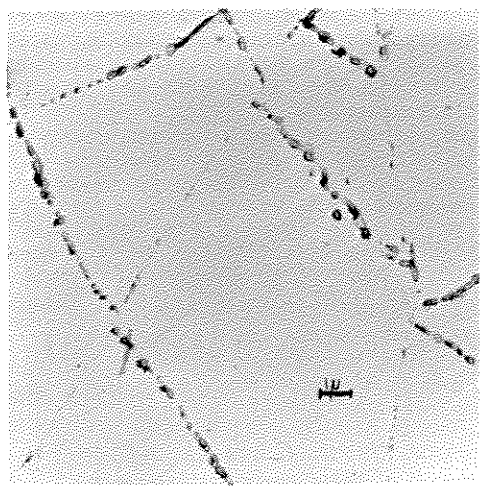
MELPAR-A-GRAPH

Volume 8, Number 1 MELPAR, INC. • A SUBSIDIARY OF WESTINGHOUSE AIRBRAKE CO. **February, 1963**







POWERFUL NEW RESEARCH TOOL . . . Scientist Martin Gimpl demonstrates use of the Research Division's newest research tool, the electron microscope. Capable of magnifications up to 200,000 times, it is currently being used in the Solid State Physics Section in studies of dislocation structures and semi-conductor junctions. Shown at top right is a micrograph of an electron diffraction pattern in evaporated gold obtained with this versatile new instrument.

The micrograph at lower right shows chromium plating containing zirconium diboride particles segregated at the grain (or crystal) boundaries. The original micrograph represented a magnification of 12,000 times. Note that the scale in this photo represents one micron or .001 millimeter.

Electron Microscope Photo by Glittenberg

OPERATION MANPOWER

It takes high-reliability people to develop and produce high-reliability products. In order to assure that all Melpar employees meet this standard the Employment Office has been charged with the responsibility of careful screening of all applicants. During 1962 when the Minuteman Division began its rapid build-up in personnel, the Employment Office selection ratio was one new employee out of e applicants.

In order to keep the build-up of personnel strength on schedule in the Minuteman Division, Employment Office activity reached a record level during

(Continued on Page 4)

FALLON ELECTED TO MEMBERSHIP IN WASH. ACADEMY OF SCIENCES

Dr. Robert J. Fallon, Senior Chemist, was elected to membership in the Washington Academy of Sciences at a meeting of the Board of Managers held on December 6, 1962. He was elected to membership in the Academy in recognition of his contributions to chemical physics, and in particular, his researches on molecular interactions.

Dr. Fallon came to Melpar from the University of Maryland's Institute for Molecular Physics in June of last year. He is the author of sixteen articles describing his research in molecular interactions. He received his Ph.D. in physical chemistry from Catholic University of America in 1959.

$340,000 CONTRACT AWARDED TO MELPAR FOR ALD-4 PARTS

Officials of Headquarters, Warner Robins Air Material Area recently announced that the Air Force has awarded a $340,000 contract to Melpar. The contract is for replacement parts applicable to AN/ALD-4 and was a competitively negotiated procurement.

Awards of major Air Force contracts are made by Warner Robins Air Material Area, Robins Air Force Base, Georgia, as part of its activities as a world-wide procurement, supply and maintenance source for the Air Force.

HOLIDAY

Melpar people will enjoy a three-day weekend during February. Washington's birthday, one of our seven paid holidays, falls on Friday this year. Employees are off Friday, Saturday, and Sunday and will return to work on Monday, February 25.

Since Friday, February 22 would normally be a pay-day, payroll checks will be distributed on Thursday, February 21.

MELPAR TO DO BIOPHYSICS RESEARCH FOR USAF OFFICE OF SCIENTIFIC RESEARCH

Melpar has been awarded a contract for basic research in the role of lipid phase transitions in biological membranes. The $36,000 research program is being sponsored by the U.S. Air Force Office of Scientific Research of the Office of Aerospace Research and has been assigned to the Research Division's Chemistry and Life Sciences Department.

Designated as the Principal Investigator for this program, Dr. Ira Blei will attempt to produce condensed systems of phospho lipids which mimic in certain respects cell membranes. Using these model membrane structures he will determine the effects of order-disorder transitions in the lamellar structures on permeability to sodium and to potassium.

The hypothesis being explored under this contract could result in the affirmation of a principal which may have applications in electro-chemistry, biological fuel cells and saline water conversion problems.

CELEBRATING THEIR FIRST TEN YEARS WITH MELPAR . . . The happy assembly of familiar Melpar faces shown above are celebrating the receipt of their Ten-Year Service Pins for which they became eligible during January. Ten-Year Pin recipients attending the luncheon with an officer of the Company and their division or department heads were M. Edward Hobbs, Troy F. Loughry, William H. Mahon, Mrs. Margie Marlow, Mrs. Catherine T. McIntosh, Robert G. Murrell, Mrs. Lizzie E. Sager, Miss Catherine Sauchak, Russell J. Owens and V. A. Van Cleef.

According to Mrs. J. T. Lafrank, Personnel Director and hostess for the luncheon, all those who completed ten years with the Company by the end of 1962, were honored at the dinner given last August to initiate the Service Pin Program. The January luncheon is the first of the Service Pin Luncheons which are to be held each month for those receiving 10 year Service Pins.

Seated clock-wise from the left are: J. W. Hall, Mrs. M. Marlow, Mrs. L. E. Sager, W. C. Purple, Mrs. J. T. Lafrank, R. J. Owens, V. A. Van Cleef, R. G. Murrell, L. C. Wright, M. E. Hobbs, Miss C. Sauchak, J. J. Rooney, T. F. Loughry, Mrs. C. T. McIntosh, W. H. Mahon and J. F. Hilfiker.

GOING UP!

Recent promotions include M.J. Barentine to Shop Foreman, F.A. Behrens to Principal Engineer, L.H. Carpenter to Secretary, and W.E. Cook to Inspection Supervisor.

H.B. Crane moved up to Systems Engineer, W.V. Davis to Inspection Foreman, R.K. Felty to Supervisor of Manufacturing Control, and C.A. Funkhouser to Shop Supervisor.

L. Goldstein advanced to Senior Mechanical Engineer, R.L. Hammerly to Accountant, R. J. Keeter to Programmer, and H. L. King to Inspection Foreman.

M.F. Ketchem stepped up to Senior Planner, J.C. Knox to Scheduling and Estimating Supervisor, W.T. Lynch to Inspection Foreman, and J.R. Mars to Junior Methods Engineer.

H.E. McClure was promoted to Senior Planner, R. McCormick to Secretary, H.L. McMillion to Junior Methods Engineer, and W.F. Moore to Assistant Program Coordinator.

R.W. Peeler moved up to Planning Supervisor, C.E. Penland and H.D. Pickett to Senior Systems Engineer, E.L. Stratton to Storekeeper, and C.D. Wallace to Progressman.

A.C. Williams advanced to Executive Secretary, C.F. Wojtunik to Test Supervisor, J.B. Wrenn to Senior Planner, and A.M. Yee to Chemical Engineer.

OPERATION GREENLIGHT

Fifty Melpar supervisors have been getting up early, staying late, and saving money (for the Company, of course) as a result of their participation in the Work Simplification Course. Sponsored by the Value Improvement Program, the Work Simplification Course is the initiating activity for "Operation Greenlight." The objective of the course is to "work smarter—not harder." More next issue. . .

VIP SAVINGS RATE INCREASES AGAIN DURING DECEMBER

A new high rate of savings was attained in December as the Value Improvement Program reported $119,000 annualized savings for that month. The December figure brought the total reported annualized savings for 1962 to $917,000.

According to Mr. R. A. Bublitz, Value Improvement Coordinator, "last year's cost reduction efforts will have to more than double if we are to meet our 1963 goals." He added that "we need the active participation of every Melpar employee in seeking ways to reduce costs in order to achieve our 1963 goals." Mr. Bublitz emphasized that no cost-reduction idea is too insignificant to be considered by the VIP Committee and urged all employees to present their value improvement ideas to their supervisors or to one of the VIP representatives in their division or directorate.

Contributing to the December VIP savings figure were Purchasing, Research Division, Office Services, Drafting, Quality Control, Reconaissance Department and Plant Engineering.

ENZYMATIC STUDY ASSIGNED TO RESEARCH DIVISION

The award of a $38,000 enzymatic research program sponsored by the U.S. Army Biological Laboratories was announced recently by President E. M. Bostick.

The enzymatic research program is under the direction of Dr. Milton A. Mitz, Head of the Research Division's Life Sciences Section. Dr. Mitz has received international recognition for his research in enzymology.

INFRARED STUDY CONTINUES WITH AWARD OF NEW FUNDS

Melpar, Incorporated, was awarded in September 1962 a Navy contract for the study of infrared phenomena. This contract involves theoretical studies, laboratory experiments, and some field radiation measurements. The total value of the contract is approximately 105,000 dollars.

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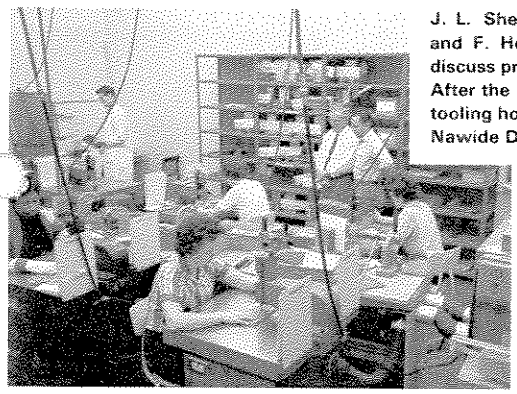
"We do the impossible"

MINUTEMAN DIVISION FABRICATION SHOPS DELIVERING 4,300 P-C BOARDS PER WEEK

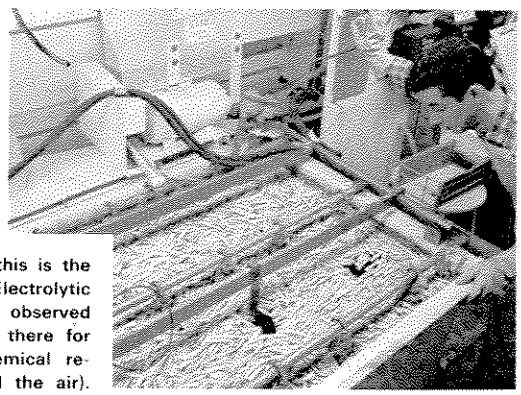
The Minuteman Division's Fabrication Shops are delivering high-reliability p-c boards at the rate of 4,300 per week. Only a few short months ago this rate of production seemed an almost impossible task to many of us. But under the direction of Mr. R. J. Moneyhon the "Fab" Shops seem to have adopted the motto "We do the impossible, on schedule."

The p-c boards produced by the Fab Shops are used in the high reliability assemblies and modules which Melpar supplies to Autonetics. Autonetics uses these assemblies and modules as electronic building blocks in the inertial guidance, flight control, and ground checkout systems which they produce for the Minuteman Missile.

The pictorial salute which we are publishing on this page shows some of the facilities which help to make Melpar's p-c board fabrication capability unique in the industry.

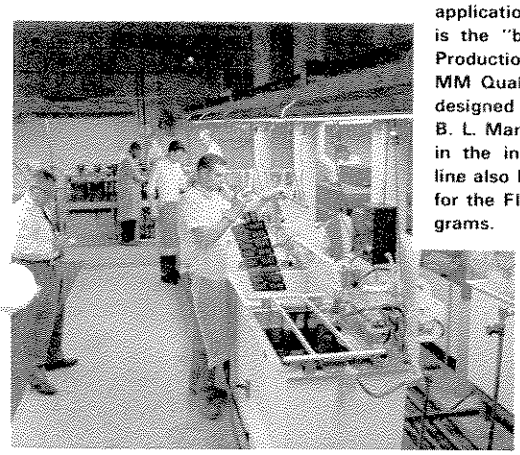


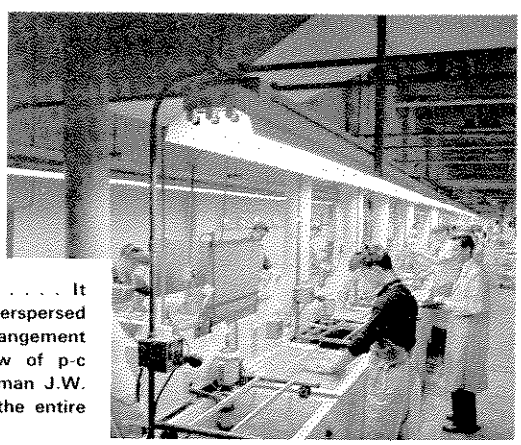
J. L. Sherwood, Day-Shift Fab Shops Supervisor, and F. Hertzog, Mechanical Technician 1st Class, discuss production schedule on the drilling operation. After the boards are cut to size and pinned by the tooling holes, the circuitry holes are drilled on these Nawide Drilling Machines.



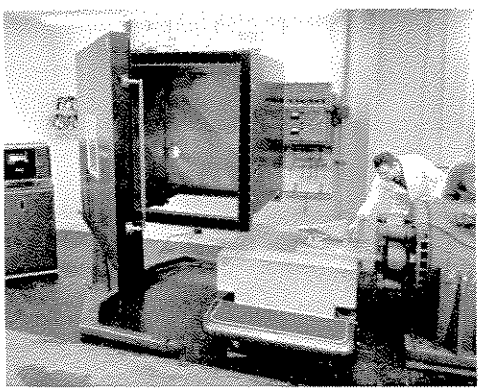
MELPAR'S RAVIOLI MILL???. . . . No, this is the solder circuit plating tank on the MM Electrolytic Plating Line. The floating plastic pillows observed on the surface of the chemical bath are there for the purpose of reducing oxidation (chemical reaction between the plating solution and the air). Since the bath contains bone glue as a catalytic control, the plastic pillows also help to keep the plating line from smelling like a glue factory.

SAPU. . . . The newest addition to the Minuteman Electrolytic Plating Facility has been installed to provide a capability for making gold contact solder circuit boards. The gold contacts are plated in a unique manner on the Semi-Automatic Plating Unit (SAPU) shown in the far background. This machine plates gold on the contact bars only prior to the application of the solder alloy plating. This machine is the "brain-child" of A.D. Moon, MM Division Production Engineering Manager, and G.T. Vigione, MM Quality Control Laboratory Supervisor. It was designed and built by Senior Mechanical Engineer B. L. Manilla and has caused considerable interest in the industry. The solder-plating portion of the line also has the capability of producing p-c boards for the FINDER, the B-47, ALD-4, and similar programs.





MELPAR'S UNIQUE PLATING FACILITY . . . . It is very unusual to see rinse tanks interspersed between each electrolytic bath. This arrangement makes possible the continuous line flow of p-c boards through the plating process. Foreman J.W. Reid (with clip-board) is responsible for the entire plating line operation on the day shift.



SOME LIKE IT HOT; SOME LIKE IT COOL; ETL MAY NOT "TWIST", BUT THEY CAN SPIN AND VIBRATE HOT OR COOL . . . No, Melpar's Environmental Test Laboratory (ETL) is not operating a dance studio. They only wish to advertise their new capabilities acquired during their recent expansion of facilities.

Test Technician Charles S. Barrett prepares a horn antenna in photo at left for random vibration testing in the temperature-vibration chamber. Simulating random vibrations produced during lift-off of a rocket, ETL's new random vibration equipment can subject a test item to a band-width of frequencies from 20 cps to 2,000 cps simultaneously. In addition it can program a swept sine wave from 5 cps to 2,000 cps superimposed with the random vibrations. Besides "white-noise" random vibration, the spectrum can be shaped to almost any desired configuration by use of the spectral density equalizors and displayed on meters of the spectral density analyzers as power spectral density. The Random Vibration Console (not shown) includes 43 analyzers and 54 equalizers, each covering a specific narrow band-width which together cover the full range from 20 cps to 2,000 cps. While subjecting test items to mixed random and sine vibrations, ETL can simultaneously subject them to temperatures ranging from -100°F. to 400°F.

In the photo at right, Test Technician Charles M. Nelson prepares a test item for an acceleration test in ETL's new centrifuge. Simulating "lift-off" acceleration and re-entry deceleration, the centrifuge has a centrifugal capacity of 15,000 G lbs. It will accelerate 100 lbs. to 150 G or 150 lbs. to 100 G. In case you were wondering, it turns up to 340 rpm. Anyone for a spin around the room?

Photos by Glittenberg

MELPAR SCIENTIST TO ADDRESS AUSTRALIAN CONFERENCE ON ELECTROCHEMISTRY

Dr. Milton J. Allen, Research Associate in the Research Division's Chemistry and Life Sciences Department has been invited to describe some of his latest research in electrochemistry before the 1st Australian Conference on Electrochemistry to be held in Sydney and Hobart Australia, 10-22 February. Title of his paper will be "The Electrochemical Aspects of Some Biochemical Systems, II-Further Investigations on the Glucose-Glucose Oxidase System."

According to Dr. Allen, the human body oxidizes glucose much more rapidly than can be done in the laboratory by conventional methods and the subject paper will report on his continuing investigation of the role of iron in converting glucose to a rapidly oxidizable form. The Conference is being sponsored by the Royal Australian Chemical Institute, the University of Tasmania, and the University of New South Wales.

Prior to joining Melpar in September of last year, Dr. Allen had been Director of Chemical Research and Director of Physical Research at Electro-Optical Systems and Ciba Pharmaceutical Products respectively. Receiving his Ph.D. in physical chemistry from Johns Hopkins University in 1949, Dr. Allen's professional activities have included: Chairman, Electroorganic Division, American Electrochemical Society; Fellow of the American Institute of Chemists, Chemical Society, Faraday Society, Deutche Bunsen-Gesellschaft; Honorary Fellow of the Japanese Electrochemical Society; Honorary Member of the Polarographic Society of Japan; and Recipient of the Distinguished Service Medal, University of Liege, for contributions to electrochemistry, 1960. He is the author of numerous papers on pharmacology, medicinal, organic, physical organic, and electroorganic chemistry; and a book, "Organic Electrode Processes," Reinhold, 1958. He has held lectureships at the Imperial College of Science, Central Electrochemical Research Institute of India, Osaka Prefecture University, and the Universities of Madras, Kyoto, Tokyo and Liege; and is Associate Editor of the Journal of Electrochemical Technology.

DEFINITION

In the interest of developing a common understanding and approach, we have, through exhaustive research, depth interviewing and a touch of ESP, derived and hereby submit for the enlightenment of all, the following definition:

COMMUNICATIONS: That which everyone is doing, to try to find a better way for all to have more of since the lack of it is the source of manifold problems which can only be solved by great quantities of it.

SPIVACK AUTHORS MAGAZINE ARTICLE

The Purchasing Directorate's Value Analyst, Mr. Jack Spivack, authored an article entitled "How To Set Up A Blanket Order Program" which was published in the November 1962 issue of *Purchasing* magazine.

The Article discusses the advantages of blanket purchase orders, how to isolate the items best-suited for blanket order contracts and describes a method for setting up a blanket order program. According to Mr. Spivack, blanket purchase orders inevitably result in sharp reductions in administrative paperwork, purchase prices, and other associated procurement costs.

MANPOWER

(Continued from Page 1)

December with new employees reporting to work at the rate of 93 per week. Recruitment for Minuteman remains at a high level as the build-up in personnel strength continues.

Though recruitment for Minuteman accounts for the majority of the more than 1,000 new faces at Melpar last year, it does not by any means represent our total employment activity for the Company. Requirements for many positions at Melpar have become so specialized that the Employment Office is not only looking for the proverbial "needle in the hay-stack". . . they are searching for a needle with a particular kind of eye. Thus, for these positions the selection ratio rises to one new professional person out of ten applicants. For example the Employment Office is conducting a continuing search for astrophysicists, astronomers, microbiologists, entymologists experienced in tissue culture techniques, geophysicists to develop techniques to be used in sampling the terrain of the moon, and gas chromatographers to develop techniques for sampling the atmosphere of Mars. And these are only a few of the skills required by only one of the divisions whose requirements for qualified personnel must be satisfied.

1962 was a busy year in the Employment Office and judging by the requirements for new personnel from Minuteman and other elements of the Company, our employment people anticipate another busy year in 1963.