MELPAR-A-GRAPH

Volume 7, Number 3 MELPAR, INC. • A SUBSIDIARY OF WESTINGHOUSE AIR BRAKE CO. May, 1962

# New Business Up 40% For First Quarter Melpar President Tells Stockholders

## *$6,300,000 Funding Added Under Minuteman Contract*

Melpar has been authorized by Autonetics Division of North American Aviation to proceed with follow-on Minuteman work. Preliminary funding of $6,300,000 was authorized on 24 March by Autonetics.

It is expected that additional fundings will be made as production rates for the parts Melpar fabricates for Minuteman are increased to keep pace with the accelerating missile build-up.

Work on this phase by Melpar will be to supply the high reliability circuit board assemblies and modules that are used as "electronic building blocks" in the inertial guidance, flight control and aerospace ground equipment Autonetics produces for the Air Forces' Minuteman missile.

The Company will now purchase electronic components directly from the manufacturers of high reliability components for this program.

## Communications Study Assigned To Applied Science Division

Melpar has recently been awarded a contract by Rome Air Development Center for "Investigation and Feasibility Study of Gallager Code" to cover a period of six months and funded at $50,170. The new contract has been assigned to the Applied Science Division.

This is a low-density, parity check coding technique which offers certain unique advantages for efficient communications systems. It was originally conceived by Dr. Robert G. Gallager, Applied Science Division Consultant, and presented in his doctoral thesis at the Massachusetts Institute of Technology in 1960. Since that time, it has been further developed by Melpar's Applied Science Division.

The sponsoring agency for this contract is Air Force Systems Command, Rome Air Development Center, Griffiss Air Force Base, New York.

## MELPAR AWARDED $1.4 MILLION FOR MISSILE TRAINERS

Melpar has been awarded a $1.4 million Air Force letter contract for production of nine GAM (Guided Air Missile) 83 A/B missile trainers. The Company announced receipt last year of a contract for seven of the trainers after delivery of the prototype and two production models. Total contract awards to Melpar to date for these trainers and their development total $2.8 million.

The GAM-83 is an 11 foot supersonic air to surface missile capable of delivering a conventional warhead and is usually carried by tactical jet aircraft.

The trainer was developed in cooperation with the Aeronautical Systems Division of the Air Force Systems Command to instruct Tactical Air Command pilots in pre-launch, launch, and guidance techniques. The Trainer, which can simulate varying aircraft speeds, features filmed displays of approaches to and altitudes above a terrain model. Once the pilot has "launched" his "missile," instruments record variations in the missile's flight path and note the pilots efforts to correct these deviations.

## Saline Water Conversion Study Assigned To Research Division

Melpar's research skills will be applied to the problems associated with augmenting the world's dwindling fresh water resources by converting sea water or brackish water to potable water as a result of a contract awarded by the Department of Interior's Office of Saline Water. With the world's potable water supplies shrinking rapidly in the face of mushrooming populations, much attention is now being focused on the problem of economical conversion of the world's abundant saline water resources into fresh water for agricultural and industrial uses as well as for human consumption.

(See WATER CONVERSION, Page 3)

Melpar's new orders for the 1962 first quarter totaled $10.2 million, an increase of almost 40% over the same period last year, President Edward M. Bostick reported at the annual stockholders' meeting. The Company's contract awards and additions to contracts amounted to $7.4 million for the first three months last year. "The trend is now up", Mr. Bostick told the shareholders.

First quarter earnings rose to $192,000 from $165,000 for the corresponding period of 1961, a 16% increase. Mr. Bostick reported that profit on sales during 1961, after taxes and interest, rose from 1.9% to 2.1%, a better-than-10% increase.

Employment is up, Melpar's president said, climbing from a low of 2,494 last August to approximately 3,200 today, and expected to increase.

(See NEW BUSINESS, Page 4)

## SEISMICS RESEARCH AWARD ASSIGNED TO APPLIED SCIENCE DIVISION

Melpar has received a $70,797.55 contract award for research in seismics to be performed by the Applied Science Division at Watertown, Massachusetts. This research will be supported through Air Force Cambridge Research Laboratories Contract No. AF19(628)-388, by the Advanced Research Projects Agency, Department of Defense, Project VELA-UNIFORM.

The research will be directed toward evaluating the applicability of Digital Multi-beam Steering (DIMUS) to seismic detection and the improvement of seismic signal-to-noise ratio. The DIMUS technique will be evaluated, utilizing magnetic-tape recordings from a ten-element seismometer array at the Wichita Mountains Seismological Observatory, Oklahoma. The observatory is a VELA UNIFORM facility under cognizance of AFTAC and ARPA.

Mr. Paul R. Miles, Branch Leader of the Geotechniques Evaluation Branch, Applied Science Division Physics Laboratory, will supervise the technical effort for Melpar.

# FORMER CORNELL AERO-LAB MANAGER NAMED SYSTEMS ASSOCIATE BY MELPAR

President Edward M. Bostick announced that Dr. David A. Kahn, formerly Systems Research Department Manager of the Cornell Aeronautical Laboratory, has been named to the newly created position of Systems Associate. In this capacity he will act as consultant to Melpar's technical groups and investigate new areas for the Company's military systems expansion, under William C. Purple, Jr., Vice President, Engineering and Manufacturing.

Dr. David A. Kahn

According to Mr. Bostick, Dr. Kahn's appointment marks another step in the Company's military systems expansion program which is part of an overall acquisition, diversification and expansion plan. At Cornell, Dr. Kahn headed a 100-man department which conducted research and development in advanced weapons systems, surveillance and target location systems, and optical and photographic technology.

High priority missile systems development in which Dr. Kahn played a major role during his 13 years at Cornell includes the Army's Lacrosse missile, the Plato anti-missile system for which he was program manager, and Project Defender for Defense Department's Advanced Research Projects Agency.

In the Fall of 1959, Dr. Kahn took time out to participate as a consultant in air defense studies conducted by the Supreme Headquarters of the Allied Powers of Europe (Shape), at the Hague, Netherlands.

From 1939 to 1949, Dr. Kahn was employed at the Curtiss Wright Corp. in Buffalo, N. Y., and Columbus, Ohio, where he was in charge of electrical design and installation. He received his Ph.D. in Electrical Engineering from Ohio State University in 1948 and his M.S. and B.S. in E. E. at Cornell University.

Dr. Kahn is a member of the Institute of Aerospace Sciences, the American Rocket Society and the Institute of Radio Engineers. He has been elected to membership in the following honorary societies: Eta Kappa Nu, Electrical Engineering; Sigma Pi Sigma, Physics; and Sigma Xi, research.

## GEN. GERRITY CALLS MINUTEMAN 'MOST IMPORTANT PROGRAM'

Maj. Gen. Thomas P. Gerrity, commander of the Air Force's Ballistic Systems Division, has described the Minuteman Program as the "most important defense program in the United States and the Free World."

Gen. Gerrity, speaking via closed-circuit television to more than 7500 Autonetics employees working on the Minuteman Program, called the missile a "true technological breakthrough."

### Critical Time

"Today, we are approaching the most critical phase of the Minuteman Program," Gen. Gerrity said, and noted that production of the major components of the solid-fueled missile is reaching full swing at associate contractors' plants. (As a participant in the Minuteman Program, Melpar is producing high reliability circuit board assemblies and modules for the Minuteman inertial guidance, flight control, and ground checkout systems.)

He called the "marrying" of all major elements of the operational system into a complete weapon system at Vandenberg Air Force Base this year a critical time for Minuteman and voiced confidence the challenge will be met.

Gen. Gerrity noted Minuteman was being produced on a "10,000-mile production line" stretching from border to border and coast to coast and said one of the major problems was that of coordinating such a line so all components arrive at the right place and at the right time.

### Mass Deterrent

"In Minuteman," said Gen. Gerrity, "we have a relatively small and simple missile with low cost and almost instantaneous reaction time.

"It is truly the mass deterrent weapon of the United States, making it even more important we accomplish our goals on time."

He noted the present task is to see the basic Minuteman system meets its operational deadline this year. If this schedule is met, said Gen. Gerrity, the future of the program is extremely bright and forecast a continuously improved weapon system during coming years.

Gen. Gerrity told Minuteman employees he has "great faith" that they will meet schedules.

### Work Vital

"What you do is vital," he said, noting Autonetics plays a major role in whether the Minuteman Program meets its goal. Referring to Autonetics' High Reliability Program he cited reliability breakthroughs achieved and said such breakthroughs are now aiding other military and space programs, making possible some of this country's space goals which otherwise would still be on drawing boards.

## *MM DIV. I-PEP AND G-PEP WINNERS HONORED*

Mrs. J. T. Lafrank, Personnel Director, presented Individual Performance Evaluation Program (I-PEP) award pins to Mrs. Helen King, 1st Class Line Inspector Task Leader and Mr. Charles Deuchar, Senior Planner, January and February winners respectively, at a recent Minuteman Division Awards Luncheon.

She also presented the March Group Performance Evaluation Program (G-PEP) Award plaque which was displayed for the month of April by Mr. Nathan Keen's fabrication group in the Printed Circuit Shop located at the Falls Church Plant. Mrs. Texanna Johnson attended the luncheon as the invited representative of Mr. Keen's group.

Also present were Carlos Dolinger, Foreman of the January G-PEP winning group from the LP-5 Assembly Area and Carl Mullins, Task Leader from the same group.

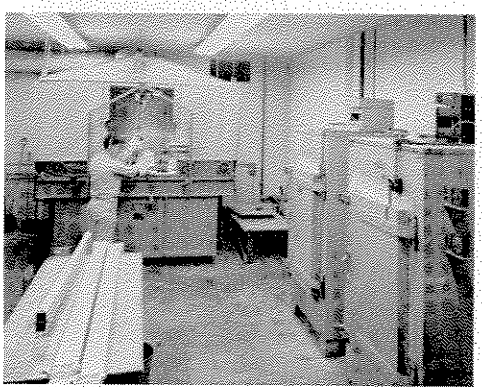
Members of the Awards Committee present at the luncheon were Mrs. Lafrank, Dr. L. A. Schmidt and Dr. T. L. Wood. Mr. J. W Hall, Assistant Division Manager, presided at the luncheon as representative of the Minuteman Division Manager.

It was announced during the luncheon meeting that consideration was being given to making future I-PEP and G-PEP selections on a bi-monthly basis. This allows for accumulation of more complete performance data and a more careful consideration by the Awards Committee.

# MANUFACTURING FEATURES FLEXIBILITY AND COMPLETE PROTOTYPE FABRICATION AND ASSEMBLY FACILITIES

Charged with a primary mission of fabricating prototype equipment from the Company's research and development designs, the Manufacturing Division has made flexibility the keynote of all its operations. The Division was formed last year by bringing together all of the Company's shop and assembly facilities under one organizational roof, and features the most complete prototype fabrication and assembly facilities in the Greater Washington Metropolitan Area.

According to Mr. Leonard C. Wright, Manager of the Manufacturing Division, the need for flexibility in the Division's operations results from the wide diversity of work required by Melpar's research and development groups for the prototype manufacture of precision components, assemblies, and extremely complex systems. The Division processes an average of 300 work orders per week with forty to fifty jobs in progress at any one time. Since very few of these work orders call for high production of a single item, the Division's highly skilled personnel must be specially efficient at changing over from one job to another while satisfying rigid requirements for precision.



**DIP BRAZING . . . Metal Brazer 2/c James L. Gillespie lowers clamped and fixtured aluminum parts into the molten salt bath to be joined by this relatively unique process. Rightfully proud of this equipment, Machine Shop Supervisor John Harris says it is another example of the facilities which give Melpar the most complete fabrication capabilities in the area. The Machine Shop has joined aluminum parts judged virtually impossible by any other method. Electronics companies throughout the Washington-Baltimore area send their aluminum parts and chassis to Melpar for brazing.**

The requirement for operational flexibility makes good manufacturing controls mandatory. They are achieved through the Division's mechanized work order system which utilizes modern data processing equipment to provide feedback for daily evaluation of the fabrication operations.

**MANUFACTURING DIVISION PRODUCTION ASSEMBLY AT THE HARDIN STREET PLANT . . . completely methodized p-c board component assembly operations are shown above in the well laid-out and organized component assembly facilities in HST-10. According to Assembly Superintendent O. J. Kennel, Melpar has been able to appeal to a wide variety of customers across the nation because of the flexibility and versatility of our assembly facilities. Offering a wide diversity of processes including silk-screen, dry-screen, and photo-etch, and a choice of plated-through holes or fuzed eyelets, Melpar's p-c board fabrication and assembly shops are satisfying customer requirements for smaller boards and even higher reliability.**

As a manufacturing control tool this system not only provides current information on the status of in-process work but has also reduced administrative control costs.

The bulk of the Division's fabrication activity results in prototype equipment for delivery to Melpar customers. This work is performed by the Sheet Metal Shop under D. J. Harrie and the Machine Shop under J. D. Harris. Non-deliverable or experimental equipment is fabricated in the Model Shop under C. H. Schmidt. Providing a quick-reaction experimental fabrication facility for the research and development groups of the Company, the work of the Model Shop ranges from fabrication of Laser devices to special tooling and dies for the fabrication facilities. Engineers and other scientists can bring their experimental designs to the Model Shop and have them fabricated by the shop's precision machinists and sheet-metal workers with a minimum of "red-tape" since only the Job Number and the approval of the Project Engineer or Branch Supervisor is required for authorization. It is estimated that a major portion of the Model Shop's time is spent on experimental devices.

The Manufacturing Shops receive technical support from the Division's Manufacturing Engineering Staff. This group provides the services of three Mechanical Engineers, a Welding Engineer, a Tool Engineer, and three Manufacturing Process Engineers to facilitate fabrication through process evaluation and tooling in the shops. They also furnish technical assistance on fabrication problems as needed.

The Division's assembly personnel have a proud record of achievement in assembly tasks ranging from the assembly of large simulators to module board assembly and precision electro-mechanical assembly in the Instrument Room. Manufacturing Assembly operations are supported by a staff of Methods Engineers who translate engineering data into procedural language for use by the assemblers. The Methods Group is also active in design improvement through liaison with, and assistance to the Engineering Division.

Current planning within the Manufacturing Division, according to Mr. Wright, has been calculated to enable the Division to keep pace with the requirements of Melpar's growing space programs. The adaptability and responsiveness to change which characterize the Division today can be expected to play an increasingly important role in its future operations.

## Saline Water Conversion

(Continued from Page 1)

The new contract provides funds for the first phase of an applied research program directed toward obtaining knowledge relative to the migration of ions in saline water by electrochemical techniques. The program is under the direction of Dr. Robert T. Foley, of the Research Division.

It is anticipated that basic research programs currently sponsored by the Department of Interior will provide fundamental knowledge that will lead to further economies in present commercial saline water conversion processes or the development of new and more economical processes. Present household water rates range from $.20 to $.40 per 1,000 gallons while saline water conversion plants can currently produce water at rates ranging from $1.00 to $1.50 per 1,000 gallons. The ultimate objective is to make these rates competitive with current household water rates.

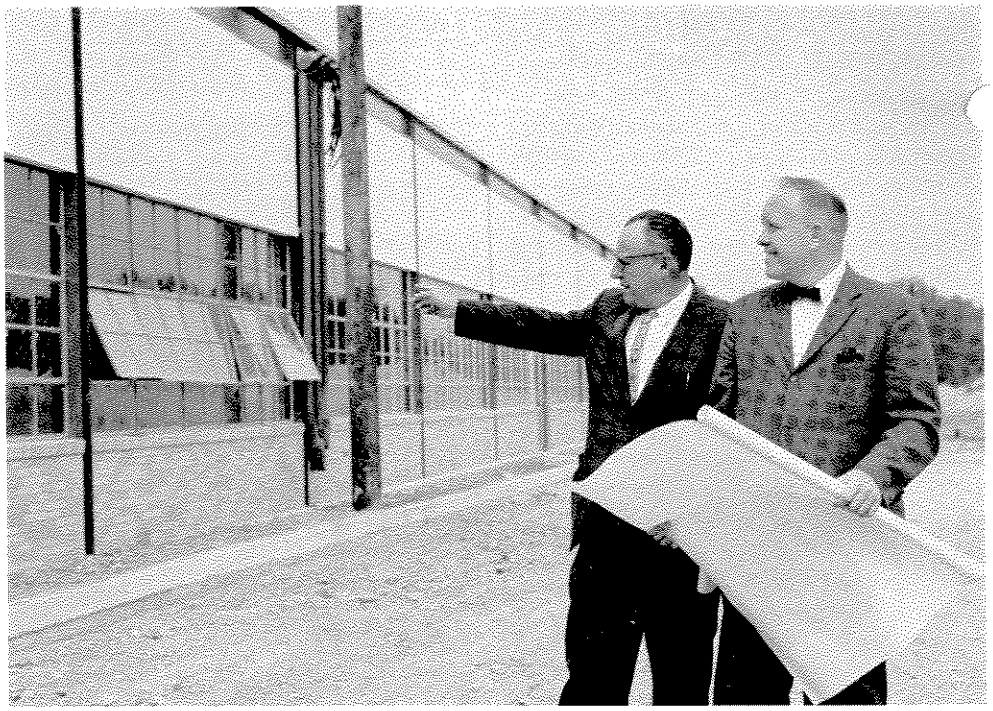
## New Business

(Continued from Page 1)

Unless a breakthrough in one or more of the Company's independent R&D programs requires immediate large funding for research, results to date and future prospects indicate sales and earnings for 1962 will exceed those of last year, Mr. Bostick added.

Organization changes effected during late 1960 aided in more efficient operation during 1961. These included formation of a contract management group which tied several major departments together and placement of the Engineering and Manufacturing Divisions under a single company officer. The year 1961 saw the establishment of the Minuteman Division and the Aerospace Division. Early this year a new subsidiary, Melpar-Fairmont Corporation, was established to utilize the skills of workers available in the labor-surplus area of Fairmont, West Virginia. This plant is now in operation.

"Melpar has oriented itself to the changing defense requirements and has done it economically and soundly," Mr. Bostick said. "We have the necessary facilities and management and technical capability to successfully conduct our business. The Company's financial position is the best in its history. I am confident that our position will be improved and that your equity in Melpar will be increased."



**NEW SHIRLEY-RESEARCH PLANT TO HOUSE RESEARCH DIVISION EXPANSION . . . Dr. P. E. Ritt, Vice President-Research (right) and Mr. R. B. Marsh, Assistant to the Executive Vice President (left) inspect the new Shirley Research Plant. The 17,500 square foot plant has been leased from the Shirley Warehouse Corporation and includes special plumbing and ventilation features as well as other special laboratory facilities to accommodate research activities in the chemical and biological sciences.**

Photo by Norton.

## GOING UP!

Promotions include L. E. Armstrong to Planning Coordinator, J. P. Bartell to Senior Test Engineer, C. L. Brien, Jr. to Chemist, and D. L. Brown to Senior Draftsman B.

M. O. Burgess advanced to Shop Foreman, J. E. Chaney to Branch Supervisor, J. G. Charitat, Jr. to Senior Electrical Engineer, and J. R. M. Chips to Senior Spares Planner.

V. F. Cimino, Jr. moved up to Junior Electrical Engineer, I. Corbin, Jr. to Shop Foreman, W. B. Czechanski to Junior Chemical Engineer, and C. A. Deuchar to Senior Planner.

R. G. Ellis was promoted to Planning Coordinator, K. A. Evans to Engineering Assistant, and R. J. Fairchild to Senior Electrical Engineer.

K. W. Friend advanced to Test Supervisor, W. J. Gabriel, Jr. to Reliability Supervisor, J. K. Hall to Planning Supervisor, and T. G. Hallinan to Senior Electrical Engineer.

G. B. Havens moved up to Senior Systems Analyst, W. P. Henke to Reliability Supervisor, A. C. Herbert to Senior Design Engineer and H. H. Hockett to Senior Quality Control Engineer.

T. R. Hogenson and R. L. Howard were promoted to Senior Planner, E. W. Hutmire to Planning Supervisor, A. J. Johnson to Electrical Engineer and R. D. Kelly to Senior Mechanical Engineer.

R. E. Kent advanced to Senior Planner, M. R. Kiley to Senior Technical Editor, I. Krause to Senior Planner and C. P. Lamb to Junior Electrical Engineer.

C. H. Mann moved up to Planning Coordinator, J. F. McCormick, Jr. to Senior Electrical Engineer, C. R. McLear to Planning Coordinator and R. D. Meyer to Test Engineer.

P. R. Miles was promoted to Branch Leader, W. B. Moore to Junior Electrical Engineer, J. F. Mullen to Programmer and M. H. Myers to Senior Research Engineer.

D. F. Pacini advanced to Systems Engineer, M. L. Parker, Jr. to Senior Electrical Engineer, P. W. Peay to Principal Engineer, and R. W. Peeler to Planning Coordinator.

J. E. Price moved up to Junior Electrical Engineer, J. E. Proctor to Systems Analyst, C. J. Ratcliff to Systems Engineer, and A. H. Roeseberg to Senior Planner.

J. R. Ross was promoted to Test Engineer, D. E. Rowland to Systems Engineer, T. J. Salisbury to Senior Planner, and R. W. Saunders to Systems Engineer.

R. A. Sparapany advanced to Branch Supervisor, F. E. Spellerberg to Shop Supervisor, C. L. Stansberry to Project Engineer and G. R. Stonecypher to Systems Engineer.

M. C. Stumm moved up to Senior Methods Engineer, F. B. Swick to Senior Planner, C. B. Tester to Systems Engineer, and G. R. Thompson to Junior Test Engineer.

F. M. Tingley was promoted to Branch Leader, J. R. Toler to Senior Electrical Engineer, J. W. Truslow, Jr. to Planning Coordinator and T. E. Weber to Senior Mechanical Engineer.

G. C. Whelan advanced to Office Manager, C. B. White to Senior Planner, D. H. White to Principal Engineer, and G. T. Viglione to Quality Control Supervisor.

W. F. Vivori moved up to Program Coordinator, and C. Zimmerman advanced to Quality Control Engineer.

MELPAR-a-graph

Published by

MELPAR, Inc.

A Subsidiary of

Westinghouse Air Brake Co.

3000 Arlington Blvd. Falls Church, Va.

Editor ..... S. E. Bush—Ext. 2182