MELPAR-A-GRAPH

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ATLAS-THOR USE MELPAR ANTENNA

NOSE CONE UNIT RESULT OF CONCENTRATED EFFORT

A part of Melpar's contribution to the Atlas Inter-Continental Ballistic Missile program can now be divulged, following recent successful flights of the nation's most powerful missile.

Special antennas, designed and developed under the direction of Section Head W. O. Puro, are being used in the nose cone for the Atlas. This nose cone is also used by the Thor IRBM.

Faced with designing an antenna that would operate at extreme altitudes as well as withstand high temperature re-entry conditions, Project Engineers W. G. Scott, responsible for electrical design, and A. A. Lawson, responsible for mechanical design, launched a materials testing program in conjunction with the Falls Church Chemistry Laboratory.

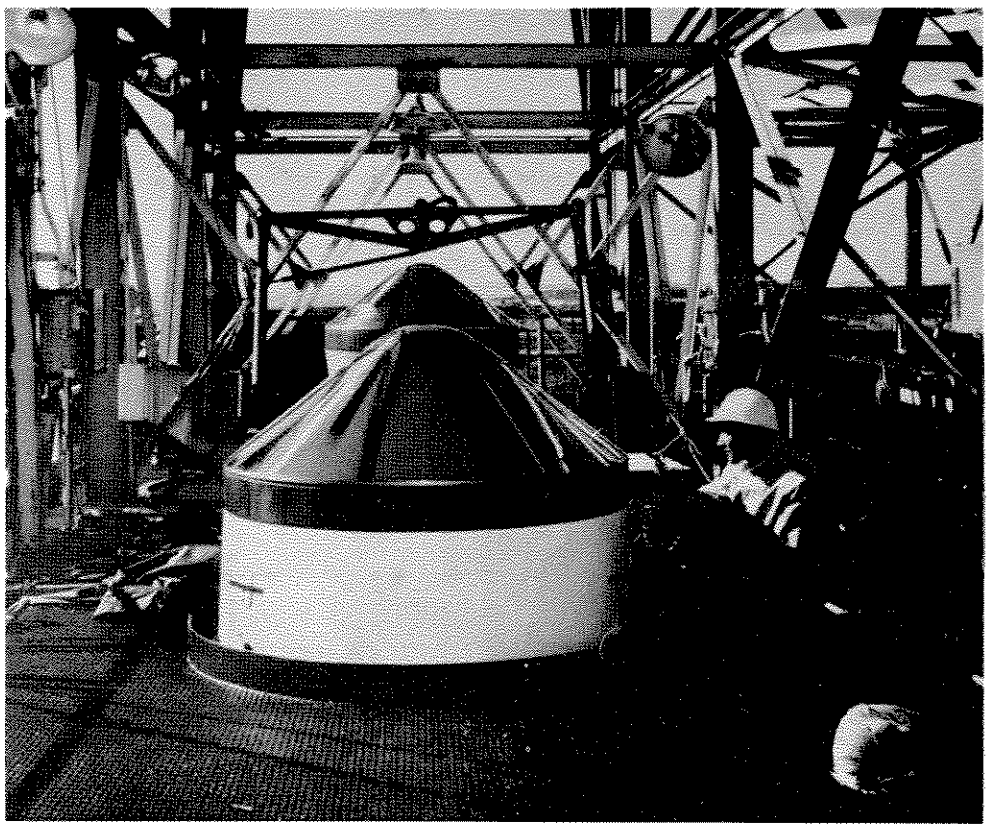
The investigation required the development of new techniques and special high temperature furnaces to measure mechanical, thermal, and dielectric properties of proposed materials up to 3000 degrees fahrenheit. A jet torch, normally used to bore holes in rock formations, was adapted to achieve the desired velocity and temperature necessary to test the erosion rate of the materials. Approximately 500 materials and combinations were tested by Materials Branch Supervisor J. L. Pentecost's group before one meeting all specifications, including the ability to withstand re-entry temperatures, was chosen.

Final design of the antenna incorporated novel construction (still considered classified information) conserving both space and weight. At the peak of the development program more than 65 people, both from Antenna Section and Chemistry Laboratory, were engaged in speeding the ultimate delivery of the equipment.

Procurement of materials for the nose cone antenna was given priority, with suppliers and sub-contractors instructed to expedite shipment to Melpar. Work was rushed through the shops. Stage after stage of development was passed successfully and followed quickly by fabrication, test and inspection. Shipment of the finished hardware was made under the direction of Foreman J. H. Leatherwood.

Involved in the production of the antennas at the Arlington Division are Project Engineer A. D. Robbins, Machine Shop Supervisor J. D. Harris, Assembly Supervisor F. E. Spellerberg and Planning Supervisor L. Nielsen.

Melpar's portion of the work was done under subcontract from the General Electric Company's Missile and Space Vehicle Department, which bears responsibility for the entire nose cone.



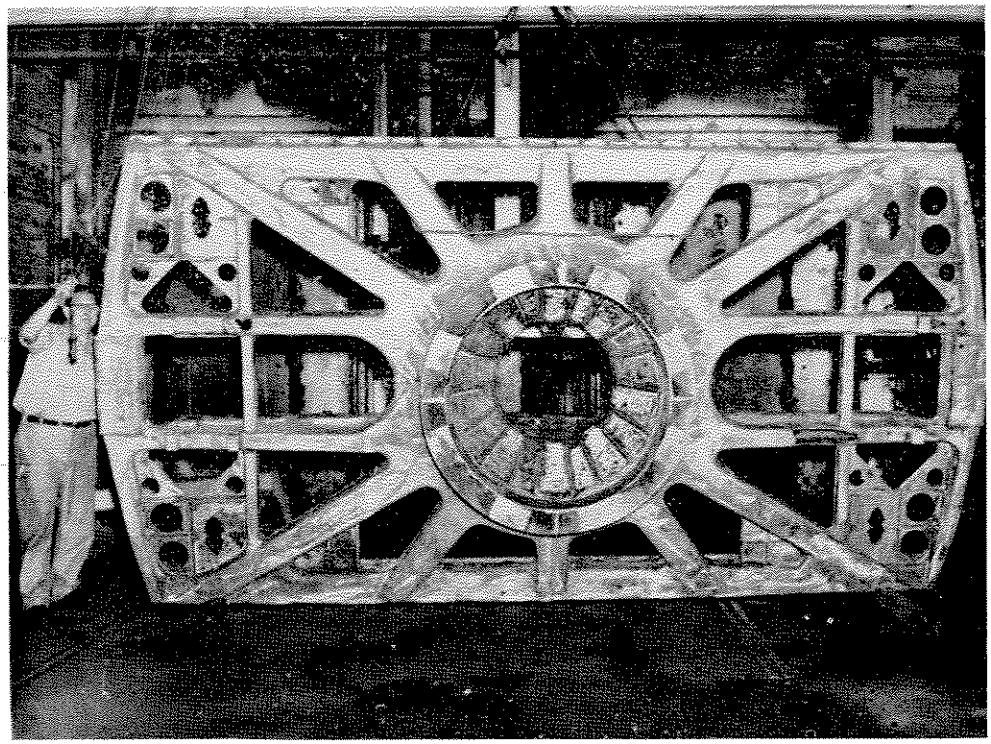
POISED ATOP a Thor missile is the nose cone carrying an antenna system designed and developed by the Falls Church Antenna Section. Nose cone in the background is spare in position for last minute use. Shortly after this photograph was taken the missile roared away on a successful flight.

Photo Courtesy of General Electric

EDUCATIONAL PLAN HITS NEW ENROLLMENT HIGH

Registration for courses under Melpar's tuition reimbursement plan will hit an all time high this semester. At press time enrollments in various physics, chemistry, engineering and mathematics courses had reached 381 and all indications are that the final figure will far exceed 425. Previous high enrollment was in the fall of 1956 when 380 employees were enrolled.

The list of schools being attended includes not only local colleges and technical schools but also schools all over the country. Employees stationed out of the Northern Virginia area have enrolled in such schools as the University of Colorado, Texas Christian University, the University of Arizona, Northeastern University, Tufts College, and MIT.



HEAVY, HEAVY . . . Melpar's H-37 Helicopter Simulator will use one of the largest aluminum castings ever made in the United States. Shown here at ALCOA's Casting and Forging Division, Cleveland, Ohio, the casting is the yaw frame for the visual projector used to give realism to the trainer. Over 8000 pounds of aluminum were melted for the part (measuring roughly 16½ feet by 9 feet by 2½ feet and weighing 4430 pounds) and over 5000 board feet of lumber used for the pattern.

Photo Courtesy of ALCOA

MELPAR'S FLIGHT SIMULATORS SUBJECT OF MAGAZINE ARTICLE

Melpar's "Century Series" jet fighter flight simulators, extensively used by the Air Force to develop and maintain pilot skills, were featured in an article in the current issue of "Military Automation" magazine. The article was illustrated by a drawing of the F-101A done by Technical Illustrating under Assistant Supervisor C. N. Allred.

The article noted that the simulators are "providing safe and inexpensive pilot training which is so realistic that even experienced jet pilots are given regular training exercises with it."

COURTNEY, BROWNE PAPER PRESENTED AT SYMPOSIUM

As a result of an invitation extended to Melpar by the Department of Defense and the Engineering Research Institute of the University of Michigan, R. H. Courtney and F. A. Browne prepared and presented a classified paper at the Symposium on Electronic Warfare held at the University on October 1, 2 and 3, 1958. Central theme of the conference was "Changing Technology in Electronic Countermeasures".

IMPROVED WEATHER PREDICTION METHODS SOUGHT BY BOSTON RESEARCH LAB FOR AIR FORCE

Improving short period terminal weather forecasts of ceilings and visibility by use of objective methods is the purpose of a study currently being conducted by Melpar-Boston.

Aimed at reducing an estimated 2½ million dollars in monthly aircraft losses where weather is a contributing factor, the contract from the Air Force Cambridge Research Center is valued at approximately $100,000.00.

200,000 IBM punched cards with surface weather observations from 10 stations in the New York-New Jersey area are being processed on Melpar's Datatron computer.

Tests of 5 objective programs previously used for other meteorological purposes are being made to determine their applicability. The methods being tested by Senior Research Engineer C. F. Jenkins along with Research Engineer P. F. Twitchell, Analyst M. C. Maguire and Programmer B. C. Thaxter are: graphical regression, linear regression, grouping method and 2 statistical methods.

INTERFERENCE IS SUBJECT OF STUDY AT MELPAR BOSTON

An increasing number of current projects at Melpar-Boston under the general guidance of Applied Physics and Communications Laboratory Supervisor Dr. David Van Meter are concerned in one way or another with the type of signal usually associated with interference. These range from investigations of methods for overcoming intentional enemy jamming and accidental friendly interference to research on the deliberate use of interference-like signals for certain communication and radar applications.

Senior Research Engineers W. B. Floyd and A. H. Nuttall are concerned with the prediction and control of mutual interference between sub-systems in a complex airborne weapons system.

Technical Planning Staff Member A. L. Fullerton and Senior Research Engineers M. L. Almquist and C. P. Summerall are studying the vulnerability of Army communications to friendly and enemy interference.

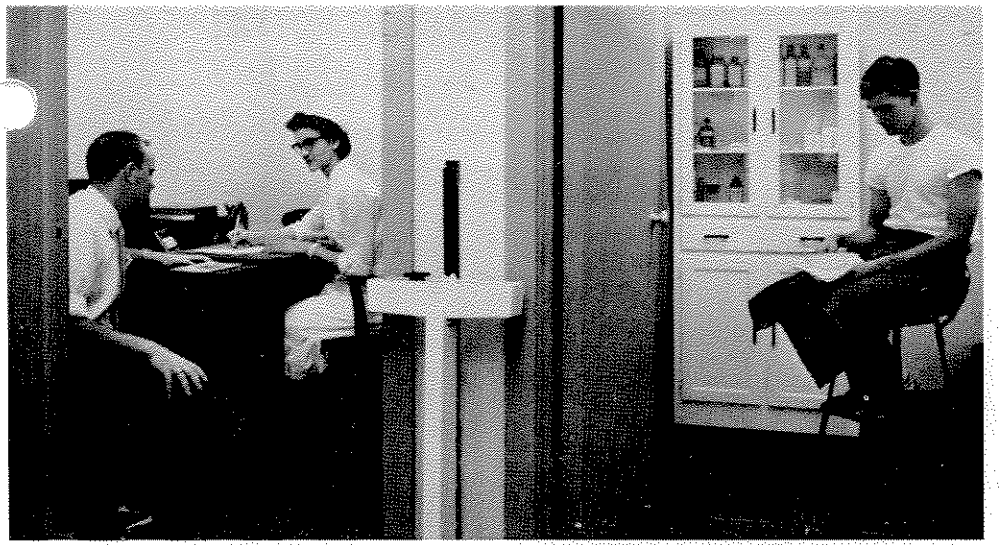
Another group, led by Research Group Leader S. M. Sussman, exploits the advantages of using noise-like waveforms as information-bearing signals. These advantages arise from the structural complexity of such waveforms which decreases their predictability from the viewpoint of an enemy without degrading their detectability by a properly designed friendly receiver, and also makes possible substantial reductions of transmitter peak power without loss of system performance.

LEVINE HEADS TWO IRE GROUPS

Administrative Project Engineer Sidney Levine has been elected Chairman of the Professional Group on Component Parts of the Washington Chapter of the IRE. He was also elected Chairman of the Professional Group on Production Techniques. Mr. Levine is stationed at the Bailey's Crossroads Plant.

FULLERTON TALK HEARD AT SYMPOSIUM

A. L. Fullerton, Technical Planning Staff Member of Melpar-Boston, was a participant in the Symposium on Prediction of Performance of Large Scale Systems held recently at the University of Michigan. Mr. Fullerton's topic was "Prediction of Interference in a Large Field Army Signal Complex."



COLUMBIA PIKE, newest of the dispensaries, serves all the plants in the Bailey's Crossroads area. Here, Nurse B. Jurasic counsels W. T. Maltby and C. E. Stinson receives treatment for an injured finger.

FALLS CHURCH DISPENSARY is a busy place as C. N. Neuman's height and weight are checked by Chief Nurse P. E. Griffith. Nurse F. L. O'Connor checks pulse of an employee who doesn't feel well and P. A. Zinchak records pertinent information.

ARLINGTON'S Nurse, M. B. Miller, checks the temperature of M. E. Scites, while R. A. Christiansen takes a call from an employee who is calling to report sick. Photos by Norton

Nurses' Many Duties Aimed At Keeping Employees Healthy

Treatment of industrial injuries, most slight—some serious, is only part of the sometimes hectic daily routine of Melpar's nurses. Stationed at Dispensaries located at the Falls Church, Arlington and Columbia Pike Plants, the nurses provide medical care for all the Northern Virginia plants, making periodic visits to plants which do not have a resident nurse.

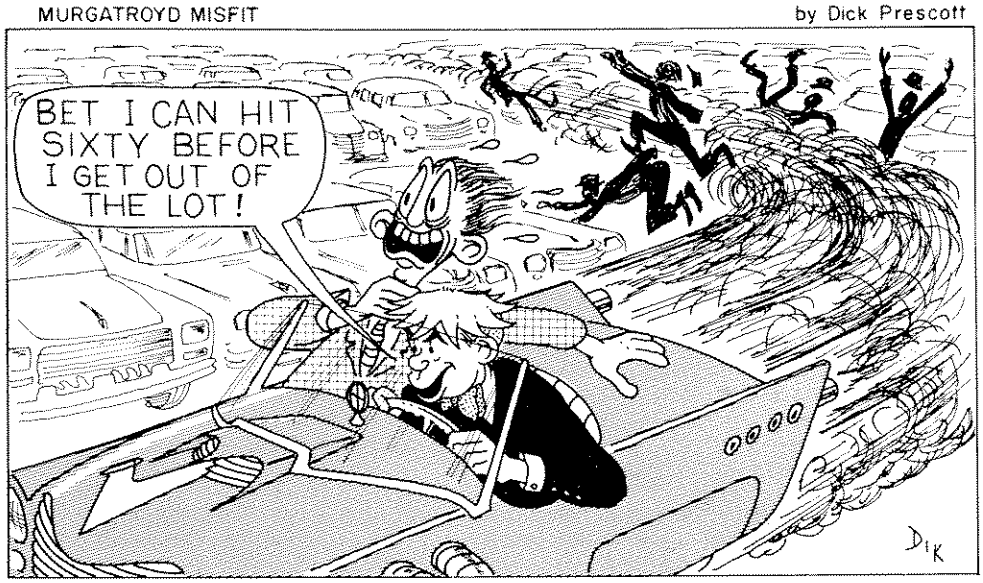
Functioning as part of the Personnel Department, Melpar's "women in white" treated over 1500 industrial injuries, ranging from a scratch to a finger amputation, during 1957. A tribute to their skill can be found in the fact that there has never been a case of secondary infection in any injury they have treated. This contributed in no small measure to the rolling up of one million no-lost time manhours worked last year. This accomplishment was marked by the presentation of a plaque to Melpar by the Liberty Mutual Insurance Company.

Chief Nurse P. E. Griffith and Nurses F. L. O'Conner, B. Jurasic and M. B. Miller count other tasks connected with employee health among their duties. Consulting employees on medical problems, recording absences due to illness, immunization of employees and serving as members of the safety committee are included, as well as conducting preliminary employment physical examinations. These examinations, conducted at the three dispensaries before the final examination by Medical Consultant, J. N. Baum, M. D., are important in determining the physical capabilities and limitations of an individual for a given job. A color blind person, for example, cannot be placed on a job which requires reading of color codes. Matching a person's physical condition to the physical requirements of a job is the aim of the examinations.

Not restricting themselves to aforementioned activities, the nurses give close scrutiny to anything which might affect the health of Melpar's employees.

Cooperation of employees in reporting sickness to the nurse promptly is necessary since sick leave payments are made on the basis of the records in the three dispensaries and the reports the nurses receive from the employees involved.

MURGATROYD MISFIT by Dick Prescott



People, or MPH, Murgatroyd?

GOING UP!

H. I. Gerson has been promoted from Project Engineer-in-Charge to Section Head at Bailey's Crossroads, and M. A. Kerr rose from Senior Engineer to Project Engineer. T. W. Nelson and C. H. Thrall advanced from Assistant Project Engineer to Project Engineer and I. B. Tiedeman moved up to Project Engineer.

Other Bailey's Crossroads Promotions saw R. L. Wilke promoted from Wire Technician to Wire Technician 1st Class and J. R. Hyer from Technician to Senior Technician. S. V. Burkart rose to Engineer from Junior Engineer.

At Arlington, W. H. Rogers moved up to Project Engineer from Senior Engineer and G. D. Moon advanced to Senior Engineer from Engineer. C. N. Lightner rose from Methods Aid to Junior Methods Engineer and E. J. Kearns was promoted to Mechanical Inspector 1st Class.

Rising to Planner from Junior Planner was C. F. Payton while W. R. Ludwick moved up to Senior Technician from Technician. M. N. Votto was promoted to Planner from Junior Planner. D. N. Leonard rose to Junior Planner from Planning Aid. W. E. Wright advanced to Machine Shop Foreman.

Columbia Pike promotions saw J. A. Hohos rise to Section Head from Project Engineer-in-Charge and C. B. Christie to Project Engineer from Senior Engineer. F. H. Kuster advanced to Assistant Project Engineer from Senior Engineer. L. H. Bohl moved up to Project Engineer.

C. R. Green advanced to Assembly Foreman from Junior Methods Engineer. H. L. McMillion and L. L. Thompson were promoted to Assembly Task Leader. R. P. Fletcher moved up to Junior Planner from Expediter.

Other Columbia Pike advancements show H. S. Corbin rising to Senior Engineer from Engineer and A. E. Baker from Planning Coordinator to Section Planning Supervisor.

Alexandria promotions include J. E. Bugg advancing from Administrative Engineer to Senior Administrative Engineer and R. J. Finneran from Engineer to Senior Engineer. D. R. Pettit rose from Expediter to Junior Planner.

At Falls Church, E. H. Lockwood was promoted to Administrative Project Engineer from Senior Engineer. S. W. Hillyer advanced to Sheet Metal Group Leader from Experimental Machinist. E. L. Culver moved up to Sheet Metal Assistant Supervisor. C. W. Parrish rose to Design Engineer.

L. R. Lankston has been promoted to Senior Engineer and W. E. Barber to Senior Technician. P. A. Kiser and P. S. Van Gorden moved up to Planner. R. E. Kellogg rose to Senior Procedures Analyst.

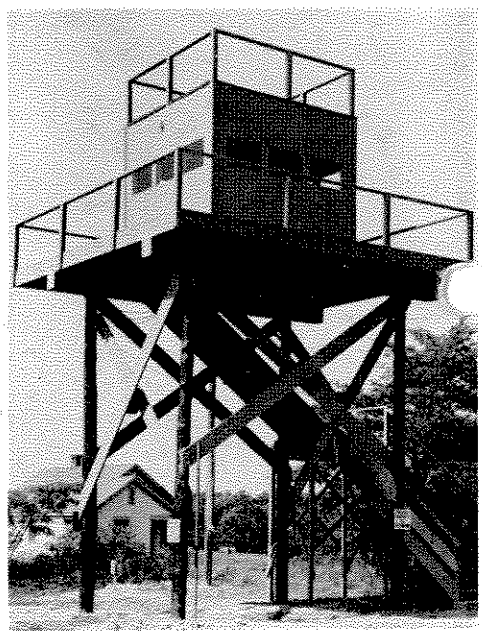
Also at Falls Church, R. V. Nolan, R. N. Fratila and G. R. Lowrey were promoted to Senior Engineer. R. E. Young moved up to Engineering Assistant. Temporary employee L. G. Lee moved up to Technical Editor.

A. M. Whorton advanced to Senior Payroll Clerk and M. R. Finnell to Group Leader. J. M. Berry was promoted to Senior Clerk Typist. T. R. Stafford rose to Group Leader.

ADDITIONAL SPACE ACQUIRED FOR TEST AND STORAGE USE

The acquisition of new storage and test space for Melpar's ever growing activities was announced by Director of General Services R. B. Marsh last week. The new space includes approximately six acres of antenna test area at Centreville, Virginia and 20,000 square feet of space in Alexandria.

The building in Alexandria, located at Prince and Fairfax Streets, was previously occupied by Melpar during 1954, before the Falls Church Plant was opened. Designated as the Fairfax Street Plant, the space will be used for storage, with two floors presently occupied by Melpar and the third ready momentarily.



TOWERING OVER the Kamp Washington Test Site is this new structure built by the Maintenance Section under the direction of Assistant Supervisor J. S. Young. A security fence has been added to the antenna test facility since our photographer made his visit. Photo by Tatroe.

The new Centreville Test Site will be used for antenna development tests requiring the use of a full scale model jet bomber. The model will be mounted on a circular concrete base allowing it to be rotated a full 360 degrees by the heavy duty antenna mount presently located on the roof of the Falls Church Plant.

Meanwhile, modification of facilities at the test site at Kamp Washington will provide another antenna test facility. Originally acquired for testing MSQ Radar systems, the company extended the lease on the property and purchased government facilities which were available at the location upon completion of the program.