

Mirabelli, Chopra, Leatherwood Receive Melpar Awards for 1964

An engineer, a scientist, and an auditor were honored at the Melpar Awards Dinner, held February 25 at the Courthouse Country Club, Fairfax, Va.

Richard E. Mirabelli, senior electrical engineer of the Advanced Computer Laboratory, received the 1964 Invention of the Year Award; Dr. Kuldip P. Chopra, manager of the Space Physics Laboratory, the 1964 Publication of the Year Award; and James H. Leatherwood, fiscal auditor of Accounting, the 1964 Value Improvement of the Year Award.

The dinner was attended by representatives of Melpar's top management, the candidates for the three awards (January *Melpar-a-graph*) and their guests, and several guests from Government agencies.

The principal speaker was Brig. Gen. Charles G. Chandler, Jr., USAF, Director of Maintenance Engineering, Headquarters, USAF. His topic was "The Importance of Cost Reduction to the Department of Defense."

Vice President and General Manager William C. Purple presented each winner with an appropriately engraved desk set as a personal trophy. The winners' names were later engraved on plaques that are

now on permanent display in the main lobby of the Falls Church plant.

Invention Relates to Self-Organizing Networks

Mr. Mirabelli won the Invention of the Year Award for his patent application "Method and Apparatus for Training Self-Organizing Networks." A native of New England, Mr. Mirabelli holds the B.S. in mathematics from Middlebury College in Vermont and the B.S. in physics from Massachusetts Institute of Technology.

He joined Melpar's engineering staff in 1961. Since then he has been involved in the study of adaptive, or self-organizing, logical elements in control, coding, and recognition systems, and also in computer simulation of such elements. He made major contributions to a Melpar study of the use of adaptive elements in a control system to optimize system performance in spite of internal failures or changes in the operating environment.

Dr. Chopra's prize-winning article was "Some Dimensional Considerations of Studies in Space-Flight Simulation." At Melpar he directs research in plasma-dynamics of objects in space, solar and

(Continued on Page 4)

Dr. Schmidt Heads Socio-Economic Center

Dr. Leo A. Schmidt has been named to head Melpar's new Socio-Economic Research Center, it was announced by Dr. Paul E. Ritt, Vice President for Research and Engineering.



Dr. L. A. Schmidt

The Research Center, to be staffed with economists, sociologists, psychologists, and educators, will examine advancing technological changes and their effects on the social and economic life of a given geographical area of the country.

On the basis of its findings, the Center will project a model of a future economy, together with social and economic requirements, enabling the area in question to avoid technological dislocation.

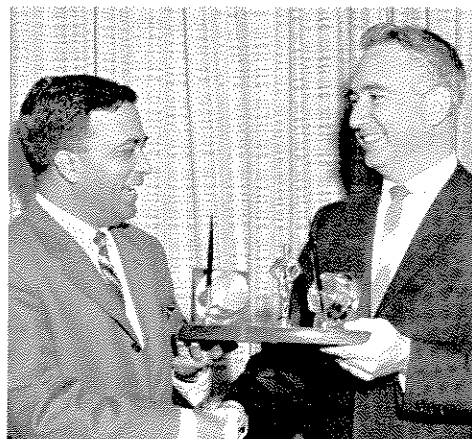
Of particular interest within this framework are Appalachia, where the economy has declined with the automation of coal mining, and the Job Corps training program, which is basically an effort to bring out disadvantaged young men and women from back eddies into the stream of sociological change.

Dr. Schmidt joined Melpar in 1953 as a Management Consultant and has been

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Richard E. Mirabelli, winner of the Melpar Invention of the Year Award, receives trophy from Vice President and General Manager William C. Purple.



Dr. Kuldip P. Chopra accepts trophy for Melpar Publication of the Year Award. Dr. Chopra, vacationing in India at the time of the awards dinner, received trophy on his return.



James H. Leatherwood is presented with trophy for Value Improvement of the Year Award.

Murrell Named Manager Of Manufacturing Division

The appointment of Robert G. Murrell as Manager of the Manufacturing Division was announced February 18 by Kenneth E. Schreiber, Vice President for Manufacturing. Mr. Murrell was formerly Director of Reliability and Quality Control.

In his new capacity Mr. Murrell is responsible for Assembly, Shops, Manufacturing Control, Manufacturing Engineering, Quality Control, and Metrology.

Mr. Murrell has been associated with Melpar since 1953. As R&QC Director, he was responsible for establishing all basic reliability and quality objectives and procedures for Melpar products.

Mr. Murrell holds the BSEE degree from the University of Kansas and has done graduate work in engineering administration at GWU.



SERVICE PIN AWARDS. Two employees completing 15 years of service with Melpar, and 11 employees completing 10 years of service, in the January-February period were guests of honor at a luncheon in the Falls Church plant on February 17. Each employee marking an anniversary was accompanied by the head of his operating unit (or a representative), who presented him with his length-of-service pin.

Seated around the table, clockwise from the left, are Donald W. Sawtelle; Thomas V. Slominski, 15 years; Leonard Kings; Charles W. Sisk, William S. Alderson, and Kathryn L. Cooper, 10 years; Dr. Leo A. Schmidt; James R. Peeler, Carl E. Strawbridge, and Verna Wade, 10 years; Vice President Charles B. Raybuck; Sara E. Rittman, 10 years; Edward L. Ditz; Esther P. Bradsher, 10 years; Earl J. Diehl; Joseph L. Zobay, 10 years; Robert G. Murrell; Leonard M. Sheeskin and Alice J. Downer, 10 years; Neil F. Ganzert; and Norman L. Cutter, 15 years. Elisha Stanfield, who completed 10 years of service, arrived after the photo was taken.

Chicago Field Tests of VCP Prove Feasibility Of Automatic Train Control

A key element in WABCO's automatic train control system (July 1964 *Melpar-a-graph*) is a small, vehicle-mounted electronic device developed by Melpar's Communications Department and called the Velocity Control Programmer (VCP).

The VCP has the capability of controlling the starting, acceleration, deceleration, and precision stopping of a train. It recently underwent full field operational tests on a two-mile stretch of a Chicago Transit Authority line. According to *Signal*, the journal of the Armed Forces Communications and Electronics Association, the VCP

"proved that it will automatically perform train running and stopping functions more accurately and efficiently than has been possible with manual control."

The basic design concept of the VCP is the work of Blanchard D. Smith, Technical Assistant to the Vice President for Research and Engineering. Heading the development phase is Project Engineer William R. Anderson of the Communications Department. Other Communications Department personnel assigned to the program are Howard Straight, Charles Wild, Bradley Koch, and Clyde Wimmer. Mr. Koch will be on hand in San Francisco for field tests of

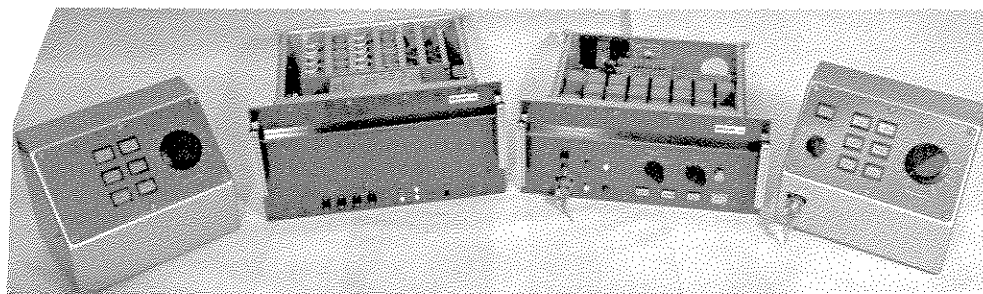
the most recent model of the VCP, slated to take place next month.

The VCP, in essence an analog computer, is designed to receive and process signals from a central control computer, from wayside equipment, and from the train itself. When it receives signals indicating the train is ready to move, it generates a dispatch command that starts the cars rolling.

A speed-limiting command from the computer sets the maximum speed at which the train is to run. The VCP compares the actual speed of the train, as indicated by a sinusoidal signal from a wheel-axle generator, with the speed-limiting command. An error amplifier develops an accelerate or decelerate signal, of the proper sense and magnitude, to modify the speed of the train.

When the stop command is generated by wayside equipment, the VCP determines how far the train has traveled since the moment of the stop command and how far it has to travel before it reaches the stop. Through a function generator, the VCP then generates a deceleration signal that will bring the train to a smooth stop at exactly the prescribed point in the station. When the train has come completely to rest, the doors open automatically for the passengers to alight.

Paramount considerations in the design and development of the WABCO system are safety and passenger comfort. Major features incorporated to ensure fail-safe, comfortable operation are necessarily omitted from this simplified description of the VCP.



VELOCITY CONTROL PROGRAMMER. This is the VCP system that will undergo field tests in San Francisco next month. The VCP proper is the second unit from the left. The other packages are adapter units that provide an interface between the VCP and the several different kinds of transit cars that will be used in the field tests.

Melpar, Inc., Reports Over \$6 Million In Cost Reduction to DOD

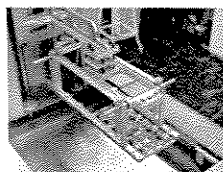
As a participant in the Contractor Cost Reduction Program of the Department of Defense, Melpar made its first report to DOD in January of this year. The report indicated that cost savings effected in 1964 amounted to \$6.6 million.

Some of the measures that Melpar took to slash costs are illustrated in posters prepared for the NSIA/DOD Cost Reduction Exhibit, April 28 and 29, in the Sheraton Park Hotel in Washington, D. C. These posters are pictured here.

Cost consciousness is nothing new at Melpar. A cost conservation program has been in operation in the company since 1962. Transition to the DOD program posed no big problem.

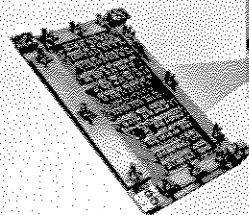
Sources of cost-saving ideas at Melpar are employees' suggestions, supervisors' reports, purchasing savings reports, value engineering reports, and industrial and production engineering reports.

PRINTED CIRCUIT BOARD WARPAGE REJECTIONS 50% LESS



BEFORE

BOARD DISTORTION
UNINHIBITED DURING
DIP SOLDER



AFTER

BOARD DISTORTION
RESTRAINED BY
FIXTURE

Fixture Saved \$1,190,078

MELPAR INC.

During a dip-solder operation, a significant number of printed-circuit board assemblies became warped. A fixture was designed to hold the assembly rigid during heating and cooling. When the fixture went into use, the scrap rate dropped dramatically. The \$1,190,078 savings include all costs for manufacture of board assemblies that would have been needed to replace warped assemblies.

MATERIAL COST REDUCED 94% HEALTH HAZARD ELIMINATED

WITH DEVELOPMENT OF NEW GOLD PLATING SOLUTION

TOXIC
EXPENSIVE



OLD

MEL-GOLD
AN INEXPENSIVE NON-CYANIDE
BRUSH GOLD PLATING SOLUTION
FOR PRINTED CIRCUIT
BOARD REPAIR WAS
DEVELOPED BY
MELPAR'S
QUALITY CONTROL LABORATORY

INEXPENSIVE
NON-TOXIC



NEW

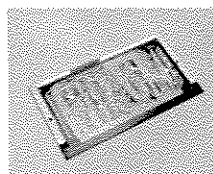
Saved \$62,178

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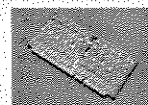
Take the term *gold plating* literally or take it as the Department of Defense uses it, to describe unnecessary materials, finishes, packaging, and the like. Either way, gold plating was eliminated from the Melpar manufacturing process referred to at right. It was replaced by solder plating on all parts of printed circuit boards except the contact bars.

GOLD PLATING ELIMINATED

WITH IMPROVED RELIABILITY



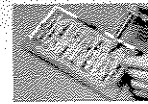
RAW ETCHED BOARD



GOLD PLATING



PRE TIN

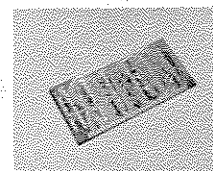


TOUCH UP

COST ELIMINATED
GOLD PLATING \$119,027
PRE TIN\$96,642
TOUCH UP\$335,728

STEPS ELIMINATED

COST CUT
\$550,397
IN PRINTED CIRCUIT
BOARD FABRICATION



SOLDER PLATED BOARD

MELPAR INC.

IMPROVED ASSEMBLY/SHIPPING RACK

RESULTS

BEFORE



TWO PIECE
PLYWOOD

- REDUCED WEIGHT 63 %
- REDUCED COST 55 %
- IMPROVED ACCESSIBILITY OF EQUIPMENT FOR ASSEMBLY
- ELIMINATED WOOD CHIPS AND CONTAMINATION
- REDUCED DESSICANT REQUIREMENTS

AFTER



ONE PIECE
STEEL WIRE

Saved \$4,370 ON 125 UNITS

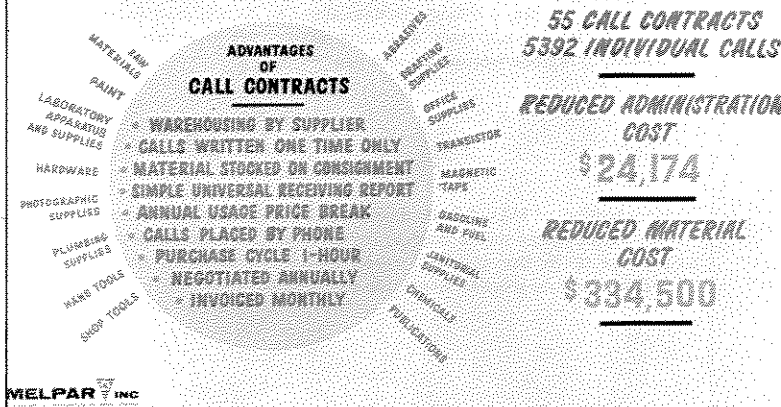
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Program Approved for '65

For 1965, Melpar's savings goal is \$1 million. The company's cost reduction program has been evaluated against criteria established by DOD and has been approved by DOD monitor Capt. T. J. Banvard, USN.

Employee suggestion led to this cost-saving antenna assembly-shipping rack.

ANNUAL CALL CONTRACTS SAVE \$358,674



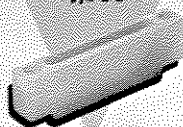
Melpar's use of call contracts goes back to 1960, when the first call contract was issued to procure maintenance supplies. The use of call contracts has since been extended to cover many types of materials, and a simplified system of internal ordering has been developed.

\$4,000 INVESTMENT YIELDS \$84,543

EXPOSED WIRES NEAR POTTED
SURFACE VULNERABLE TO
DAMAGE DURING MANUFACTURE



TEFLON PROTECTOR
DEVELOPED BY
MELPAR
AT A COST OF
\$4,000



TEFLON PROTECTOR IN
PLACE WHILE CLEANING
POTTED SURFACE



SCRAP RATE REDUCED 65%

MELPAR INC

Teflon block is a good example of how a simple idea can cut costs.

MELPAR INC

A SUBSIDIARY OF WESTINGHOUSE AIR BRAKE COMPANY

7700 ARLINGTON BOULEVARD
FALLS CHURCH, VIRGINIA

MELPAR, TOO, GETS CHANGE IN ADDRESS

Like tens of thousands of private citizens of Fairfax County, Melpar, the county's largest corporate citizen, has had its house number changed. Effective April 1, the Falls Church plant is no longer at 3000 Arlington Boulevard, but 7700 Arlington Boulevard. The change is made in accordance with the county's new "Uniform Property Identification System."

The county requests everyone affected by the change to notify his correspondents promptly. Accordingly, Melpar employees who have listed 3000 Arlington Boulevard as their business address for receipt of technical publications, and other mail related to their work, should notify their correspondents of the change.

In addition, whenever Melpar's address must be typed on a letter, report, or other correspondence, the employee preparing the material is to enter Melpar's new address. Melpar letters and forms with preprinted addresses will be revised to reflect the new address as current supplies are depleted. Employees are also advised to explain this change of address to visiting customers and vendors when directing them to the Falls Church Plant.

During April all employees will be furnished change of address cards showing the home addresses contained in Melpar's records. Please complete and return these cards promptly, indicating any change of address, since the Internal Revenue Service requires employers to maintain records of correct home addresses of all employees.

GOING UP!

Congratulations to the following employees, who were promoted in February to the positions named:

Elma M. Doran, Staff Secretary A; Robert S. Flanders, Senior Programmer; and John H. Jones, Supervisor, Engineering Unit.

Roy D. Mapes, Programmer; Roy J. Menefee, Process Engineer; Robert J. Sorrell, Supervisor, Administrative Staff; and William M. Verbeck, Superintendent, Fabrication.

Dr. Hardy Addresses Local Branch of ASM

Dr. Frank M. Hardy, Supervisor of the Virology, Cell Biology, and Immunology branch, spoke at the February 23 meeting of the Washington, D. C., branch of the American Society for Microbiology. His topic was "Virus-Cell Interactions."

Illustrating Dr. Hardy's talk was a film showing the initial changes induced in cells by virus parasites. The film was made at Melpar's Shirley Research facility by time-lapse cinematographic techniques.

Ingrisano Speaks at Career Night

Michael N. Ingrisano, Jr., Assistant to the Vice President for Engineering Services, was a speaker at Career Night at Thomas A. Edison High School. Mr. Ingrisano spoke to interested students on jobs in advertising and public relations and on how young people should prepare for them.

Alonzo J. Tyler

Alonzo J. Tyler, an electrician first class on the maintenance staff of Melpar's Leesburg Pike plant, died suddenly early this month.

Mr. Tyler had been with Melpar three years. His knowledge of the complicated

Raybuck, Ritt, Brown Figure In Changes

Charles B. Raybuck was named Vice President for Administration effective March 1. In his new capacity Mr. Raybuck is responsible for Technical Services, Security, Special Products, and Reliability and Quality Assurance, in addition to all the administrative functions previously reporting to Dr. Leo A. Schmidt. Dr. Schmidt heads the Company's new Socio-Economic Research Center.

Dr. Paul E. Ritt was appointed Vice President for Research and Engineering. Besides the research organization, he is now responsible for all functions previously reporting to Mr. Raybuck except Technical Services, Special Products, and Reliability and Quality Assurance.

Program management responsibility for all contracts was assigned to Lincoln Brown, Vice President for Contract Management. This change also was effective March 1.

machinery for manufacturing printed circuits made him a mainstay of the LP plant staff. Versatile, efficient, and very well liked, Mr. Tyler will be greatly missed by his coworkers.



ANITA SHANTZ RETIRES. After 12 years with Melpar, Anita Shantz (third from right) retired on February 26. She is the first woman to retire from the Company. Coworkers who gathered round to say farewell are, from left, JoAnn Byers, Maria Brieling, Ruby Hollowway, Assembly Supervisor Claude Hitchcock, Nellie Tacey, and Freddie Lucas.

A light assembler first class at the time of her retirement, Mrs. Shantz contributed to the production phase of some of Melpar's most important projects, including several aircraft simulator programs.

Mrs. Shantz lost no time in taking advantage of her new-found leisure. On the Monday after she retired, she hopped a jet to her native Germany. She will spend several months visiting her two sisters in Karlsruhe.

MELPAR-A-GRAFI

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SUPERVISORS' FORUM

This month Larry Shaw lists factors to be considered by supervisors in writing merit reviews.

To refresh my memory, give me a few pointers to assist me in making a fair evaluation of my employees when I am writing their merit reviews.

To establish a sound basis for an objective appraisal, always remember the following basic rules:

1) Know what duties or job responsibilities you have assigned to each employee.

2) Have definite qualitative and quantitative standards of conduct and performance against which you can measure each employee. Just as important, let the employee know what your standards are.

3) Finally, compare each employee's performance against your established standards. In rating an employee's performance, keep in mind the following:

a) Avoid "halo," the tendency to assume or indicate that a person does equally well or poorly in all things. Also, avoid any inclination to let his most recent accomplishment—whether good or poor—color your judgment of his overall performance during the rated period.

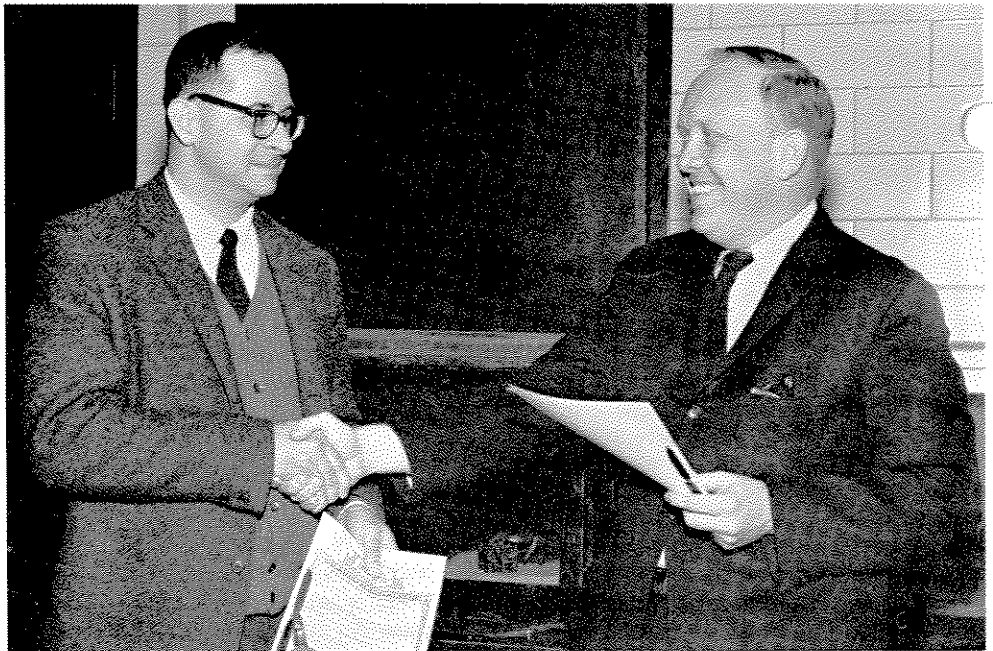
b) Eliminate bias. There is no known dependable method of evaluating a person's effectiveness from the color of his eyes or the style of his haircut.

c) Don't stereotype. Every person is unique; that is, he differs from every other person in some quality or degree. Identify the differences.

d) Base your ratings on fact. Avoid rumor and hearsay. You may and should discuss an employee's performance with his group leader; but remember that when you sign a merit review, you and you alone are responsible for the ratings you have given.

e) Emphasize accomplishments. Performance must be based upon accomplishments measured against standards you have set. When an employee does not measure up to your standards, consider whether or not his failure was due to factors or circumstances beyond his control.

As a final word, remember that your employee evaluation must transmit a clear picture so that management may, first, properly evaluate the review, and second, have an accurate record for future overall evaluation in the interest of good employee utilization.



DOUBLEHEADER. One certificate of patent award firmly in hand, S. Joseph Campanella is about to receive a second certificate from Dr. Paul E. Ritt, Vice President for Research and Engineering. Mr. Campanella, who is manager of the Electronics Research Laboratory, was recently awarded one patent for a microscope spectrum analyzer and another for a heart-beat frequency analyzer.

The microscope spectrum analyzer is a device that can analyze any predetermined small portion of a relatively long, repetitive, complex wave form. The heart-beat frequency analyzer, of which Mr. Campanella is co-inventor with the late Dr. J. N. Baum, Company physician, is an apparatus that indicates frequency components of a heart beat to permit early determination of heart malfunctions.

PHOTO BY SALMON

MELPAR AWARDS

(Continued from Page 1)

planetary atmospheric physics, physical meteorology, astronomy, and millimeter-wave techniques.

Dr. Chopra received the B.Sc. (Honors), M.Sc., and Ph.D. degrees from the University of New Delhi in India. Before coming to Melpar in 1963, he did research and taught at the Polytechnic Institute of Brooklyn, the University of Southern California, and the University of Maryland.

Dr. Chopra is a fellow of the American Physical Society and a member of the American Institute of Aeronautics and Astronautics and of the American Geophysical Union. Biographies of Dr. Chopra appear in *Who's Who in the East and Southeast*, *Who's Who in Space*, and *Leaders in American Science*.

Mr. Leatherwood merited the Value Improvement of the Year Award by his proposal that shipping containers and shipping supplies be standardized. In point of Melpar service, Mr. Leatherwood stands first among the prize winners. He started with the Company in 1952 as an expeditor and handled a variety of assignments before assuming his present position as fiscal auditor.

Mr. Leatherwood attended Akron and George Washington universities.

DR. SCHMIDT HEADS CENTER

(Continued from Page 1)

active in all phases of company operations. He was Director of Administration prior to being named Director of the new research center.

Previously, he was a member of the faculties of Lafayette College, Wesleyan University and Jersey City Community College. As a Director of the Lutheran Welfare Association of Jersey City, he was active in welfare work and succeeded in extending the association's activities to cover the entire state. He received his doctorate from Yale and did graduate work at the University of Paris.

Claire E. Smith

Claire E. Smith, European Area Supervisor, Field Service, died March 4 in Hahn, Germany.

Mr. Smith joined Westinghouse Air Brake Company, Union Switch & Signal Division, in 1953 and transferred to Melpar in 1958 with the field service operation.

Mr. Smith was held in high regard by his fellow Field Service employees, not only for his fine personal qualities, but also for the excellence of his work.