



The EMR-Telemetry News Sarasota, Florida

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GE ORDERS EQUIPMENT FOR NIMBUS PROGRAM

General Electric Company, Valley Forge Space Center, has ordered EMR-Telemetry airborne and ground equipments for use on Nimbus E, an advanced NASA meteorological satellite.

A new order has just been received for a special EMR airborne VCO package designed to fly on board the Nimbus E weather and earth-studying satellite. EMR's multiplexer electronics will be part of the FM data handling system for a sophisticated scientific experiment called a Surface Composition Mapping Radiometer (SCMR). The SCMR, one of seven experiments planned for Nimbus E, is to make scientific observations of the earth's rock surface.

Meantime, for another Nimbus E order, a one-rack EMR ground FM simulation system has been shipped to GE, Valley Forge, Pa., after successful acceptance testing last month. This EMR ground

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DEMONSTRATE EQUIPMENT AT WEST COAST NTC SHOW

A broad selection of EMR-T equipment has been demonstrated to customers this week at our display booth at the National Telemetry Conference in Los Angeles. The NTC show is one of the biggest sales promotion activities of the year for EMR-T.

Product lines shown were: 2700 series Digital equipment; 500 series PAM products; 4000 series FM products, and our 3620 S-Band Transmitter.

PICNIC SET FOR MAY 23; RESERVATIONS DUE MAY 7

Saturday, May 23, is the day for EMR-T's Annual Employees Picnic. The EMR Employees Association is busy making arrangements for the event which last year attracted nearly 1100 employees and members of their families.

Picnic Chairman Tom Maresca and his committee have selected Sun N Fun Club as the site, from 11 a. m. to 4:30 p. m., on May 23.

"To help us in ordering food and getting ready for the right number of people, we are asking all employees who plan to attend to return their reservation blanks no later than May 7," says Tom Maresca. Announcements about tickets and activities will be forthcoming as the Picnic date draws near.

Interested in inter-departmental team competition for EMR volleyball and horseshoes championship at the Picnic? Call Jim Rexrode, Ext. 414, to enter your team.

In addition to the equipment shown at the booth, EMR-T was represented at the Conference by a number of Engineers, Marketing personnel, and Western Area Sales personnel. A new 3600 RF brochure describing EMR-T's line of Transmitters and related RF products has also been inserted in the centerfold of the April/May issue of Telemetry Journal. This NTC issue of Telemetry Journal is widely distributed to professionals in telemetry and related fields.

GE ORDERS EQUIPMENT FOR NIMBUS PROGRAM (Continued)

system will provide lab simulation of the entire SCMR data handling system--both airborne and ground -- permitting GE Engineers to evaluate the SCMR Data System capabilities while flight hardware is being perfected, according to Chuck Benavides, GE SCMR Subsystem Project Engineer. Benavides participated in the ground system acceptance testing in Sarasota in mid-April.

Nimbus E is scheduled for launch into polar orbit in 1972 from the Western Test Range, Vandenberg Air Force Base, Calif. Flight hardware for Nimbus E, including EMR's equipment, is being designed to operate for two years in orbit. EMR's special airborne VCO equipment must be hermetically sealed to withstand the rigorous environment on board the orbiting spacecraft. The airborne VCO contract calls for EMR-T to supply an Engineering unit, a prototype, flight hardware, and spares.

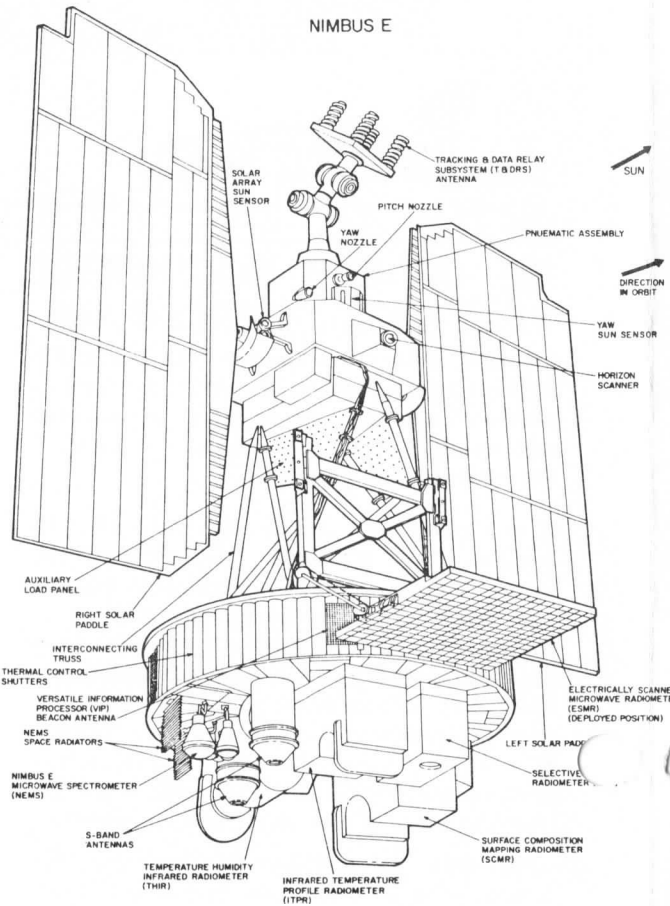
Nimbus E scientific experiments include:

- Electrically Scanned Microwave Radiometer (ESMR)
- Infrared Temperature Profile Radiometer (ITPR)
- Microwave Spectrometer (NEMS)
- Surface Composition Mapping Radiometer (SCMR) - EMR's equipment will be used on this.
- Selective Chopper Radiometer (SCR)

BARTON AND MOLLER TO PRESENT ISA PAPER

Systems Engineer Barry L. Barton and Applications Engineer Edwin R. Moller will present a joint paper at the Instrument Society of America's 16th National Aerospace Instrumentation Symposium in Seattle on May 12.

The paper, entitled "The Flight Test PCM/FM Ground Data Processor for the L-1011 TriStar," deals with the way Lockheed-California Company will use an EMR-de-



- Temperature/Humidity Infrared Radiometer (THIR)
- Tracking & Data Relay Subsystem (T&DRS)

signed telemetry/computer system to handle over 1300 data points in flight testing the new L-1011 TriStar commercial passenger jet aircraft. Work is currently nearing completion on the L-1011 Flight Test PCM/FM Ground Data Processor and related van-mounted telemetry system. It is the largest of several telemetry/computer systems produced by EMR in Sarasota to date and is valued at over \$1 million.

NEW DIAGRAMMER ADDED IN DESIGN AND DRAFTING

A new machine called a Diagrammer has been added in Design and Drafting to aid our Designers and Draftsmen in producing high quality printed circuit, schematic, and logic diagrams faster and easier.

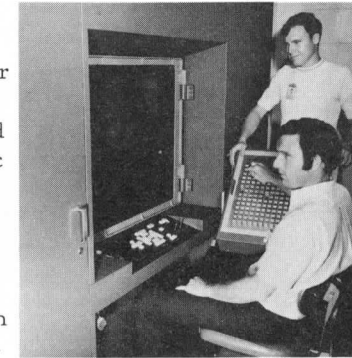
The Mergenthaler Diagrammer is an automatic push-button drafting machine. It is a photocomposition system which produces graphic representations on a sheet of film. The film can then be processed to provide the printed art work, engineering drawings, schematics, etc., required to design and manufacture our products.

Two units make up the Diagrammer system--a Selector Unit containing 256 symbols on a push-button console, and an Operating Unit containing the viewing screen and associated controls.

Here's how it works: a rough sketch, prepared on grid paper, is placed on the Operating Unit viewing screen/copy board. The Operator positions the desired symbol on the viewing screen--much as a slide is projected on a screen. He then records the symbol on the double emulsion film by touching the expose button. After the symbols are recorded, appropriate lines are selected to connect the symbols on the film. The Operator then uses the lettering feature to complete the drawing. Corrections can be made on the film, using conventional eradicator and inking methods.

The resulting film master is processed by our Engineering Photo Lab and the appropriate negatives or mylars are then ready for reproduction and manufacturing process.

"We expect this new machine to relieve Designers and Draftsmen of much of the tedious repetitive drafting detail so that they can devote their time to the more creative and more challenging aspects of



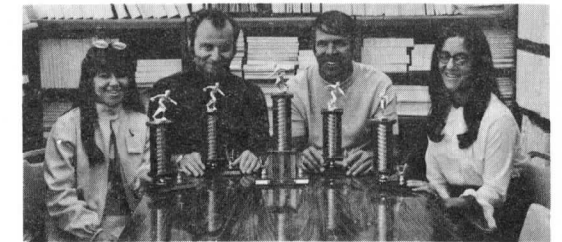
Jim Russell (seated) and Dwight Dagenais with new Diagrammer.

design work," says Joe Goodrich, Manager of Design and Drafting. "It will also give us the capability to improve the quality of our drawings and reduce cost at the same time."

Designer Dwight Dagenais and Senior Draftsman Jim Russell have recently returned from New York City after an orientation/training course on the new Diagrammer.

THE TEAM TO BEAT...

This happy EMR-T foursome just took top honors in their bowling league--and they are ready to sign up for the EMR-T Employees Association Summer Mixed Bowling League which starts in mid-May.



Kathy Sherrod (Accounting), John Ferber (Engineering), Tom Toler (Manufacturing Engineering), and Mariann Gusbar (Production) captured these trophies and over \$100 in cash.

More teams are needed for the EEA's Summer Mixed League which will bowl at 7:30 p. m. on Wednesdays at Sarasota Lanes. Call Archie Brumfield, Ext. 373, to sign up before May 6.

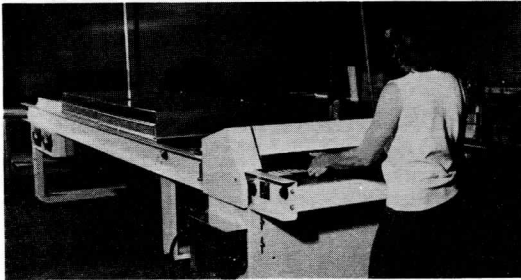
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M. E. Herbst, Editor

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NEW MACHINES IMPROVE PC CARD PRODUCTION

Two new machines in EMR-T's Printed Circuit Fabrication area are helping produce printed wiring boards better and faster. The new units were installed in April.

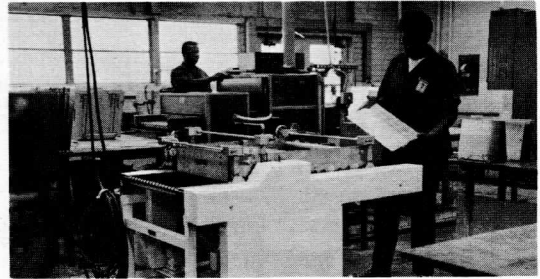


Helen Poirrier at new Photo Resist Roller Coater.

This large Photo Resist Roller Coater and Drier applies and cures a uniform coating of photo resist to the copper-clad fiberglass "boards" which are used to make printed circuit cards.

Subsequently, the pattern of the printed wiring board is produced on the copper board by exposing the light-sensitive photo resist to ultraviolet light through a photographic film. Other processes follow, including electroplating a tin-lead and/or gold coating for the needed electrical circuitry. After completion of numerous operations, including etching away of the unplated copper, the end result is a variety of printed circuit cards familiar to all EMR-T employees engaged in designing and manufacturing our products.

A second, new machine -- a Printed Circuit Board Scrubber -- is a cleaning unit which scrubs the copper-clad boards prior to the photo resist coating. A conveyor moves the boards through a scrubbing section which consists of a set of oscillat-



Washington Perry (right) with clean P. C. board as it comes through new Printed Circuit Board Scrubber. In background at left, William Parker at etching machine.

ing, abrasive brushes. A spray rinse completes the cleaning operation and the conveyor moves the boards on through a high pressure blower which dries the boards.

"This machine is a much more efficient operation than our former cleaning method. We previously used a hand-operated rotary scrubbing brush and hand rinsed," says Fred Stiefel, Supervisor of Printed Circuit and Metal Finishing. "As an added benefit, we've also discovered that this new Scrubber can assist our Microelectronics Lab by cleaning microcircuit substrates."

"With our increased microelectronics production, we needed a better method of cleaning and buffing the microcircuits," says Dietrich Riemer, Microelectronics Engineer. "Using this new machine we can clean and buff 500 substrates at a time with improved uniformity and effectiveness."

EMR-T GETS AWARD FROM GARDEN CLUB

EMR-Telemetry was among a group of Sarasota businesses honored last week by the Sarasota Garden Club for contributions to the "beauty and economic well-being of the Sarasota area..."

In presenting the award, Mrs. Glen Donaldson, Chairman of the Garden Club's Civic Beautification Committee, cited EMR-T's advanced pollution control system and use of treated effluents in sprinkling 15 acres of pine seedlings on company property. Bill Thompson, of Personnel and Services, accepted the award on behalf of EMR-T. The Garden Club Certificate and other awards are on display in EMR-T's main lobby.