



## The EMR-Telemetry News Sarasota, Florida

Vol. IV, No. 26

5 June 1970

### L-1011 TELEMETRY/COMPUTER SYSTEM SHIPPED TO LOCKHEED

The largest telemetry/computer data processing system produced by EMR in Sarasota to date has been successfully acceptance tested here and is en route to Lockheed-California Co., Palmdale, Calif. Lockheed will use the EMR ground system to handle flight test telemetry data for the new L-1011 TriStar commercial jet airliner. Maiden flight of the L-1011 is scheduled for November of this year.

"This EMR system is valued at over \$1 million," says Project Engineer Barry Barton, of Systems, "and is being delivered on schedule. It is similar to the automated data processing system EMR delivered to Lockheed-Georgia in 1968 for flight test data processing of the giant Galaxy C-5 Air Force military jet transport built by Lockheed."

This new L-1011 TriStar system contains 21 racks of telemetry modules and related equipment and an EMR 6040 high-speed Digital Computer, produced by EMR-Computer, Minneapolis. In addition to telemetry and computer hardware, EMR is also providing software (computer programs) for automatic system readiness checks, self-calibration and both on-line and off-line operation in any desired mode.

Lockheed's new 600-mile-per-hour, three-engine L-1011 TriStar jetliner is designed to carry 250 to 345 passengers in a spacious cabin nearly 20 feet wide beginning in 1971. The wide-cabin L-1011 will operate on short, medium and trans-

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### FUN, FOOD AND GAMES MADE FOR A FINE PICNIC



Close to 1100 employees and members of their families attended EMR-T's tenth annual Family Picnic at Sun N Fun on Saturday, May 23. Picnic Chairman Tom Maresca reports that over 60 hard-working volunteers pitched in to make the picnic a success. It also took: 250 pounds of hamburgers... 100 pounds of hot dogs... 10 kegs of beer... 32 tanks of pre-mix for soft drinks... 300 pounds of baked beans... 200 pounds of cole slaw... 40 pounds of tomatoes... 550 swimmers, plus games and prizes. Leftover utensils and groceries were auctioned off at the close of the picnic, and Auctioneer Ed O'Hara reports over \$171 was returned to the Employees Association treasury for future activities. Photos by Don Bolt and Lee Melugin.



## NEW MACHINES AND METHODS ADDED IN FABRICATION AREA

A program of modernization and upgrading of equipment has been underway in EMR-T's Fabrication area. Among the improved machines are a Numerically Controlled Wiedemann turret punch press, a sanding machine, and a new Gorton Mastermill milling machine with precision positioning optics.

"Modern, improved machines and revised physical layout of the area have increased our capability," says Arnie Rounds, Supervisor of Fabrication. Production Manager Jack E. Clark adds, "We can produce the precision machined metal parts we need faster and more efficiently -- and that is vital if we expect our products to meet competition in quality, price and delivery."

### Numerical Control

The new N C Wiedemann punch press is an improved version of our old hand-operated Wiedemann. Punched paper tapes are prepared by personnel in Manufacturing Engineering and in our Data Processing Lab in Systems. The tapes instruct the machine exactly where to punch the proper hole pattern in sheet metal. These metal parts become the chassis, panels and sub-panels of our products.

A single piece of sheet metal, 24 x 36 inches, may require from half a dozen to hundreds of holes -- all accurately positioned and punched. With the N C Wiedemann, improved accuracy and speed are possible because each tape always repeats exactly the same pattern and does not fatigue.



Don Felty with N/C turret punch press. Punched tape control panel is at left.

Metal templates (hole patterns) are not required, and, after first-piece inspection, only random quality checks are needed. The new machine is easier to operate and saves production time.

Group Leader Arch Colwell, Machinist Don Felty, and Tool-Die-Gage Maker Don Santaniello have all been trained on using the new machine. In addition, our Designers, Mechanical Engineers, Manufacturing Engineers and Methods personnel are utilizing the N C Wiedemann's capabilities in new product designs and processes.



Another new addition to Fabrication is this sanding machine. Machinist Rudolph James demonstrates the new machine which does precision graining, or sanding, of metal parts for our products.

Parts to be finished are placed on the 30-inch-wide movable belt and they pass through the machine which utilizes wide abrasive belts for deburring, finishing and polishing the metal parts. A hooded vacuum attachment collects the dust and fine metal particles produced during the sanding operation, making for safer, cleaner working conditions.

### PULSE - The EMR-Telemetry News

M. E. Herbst, Editor

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### Milling Machine



Neil Weber with new milling machine.

The Gorton Mastermill machine, with optics, enables our skilled machinists to produce precision metal drill jigs, fixtures, and various tools. These tools, in turn, are used to manufacture our production piece parts. With the new milling machine, blocks of steel or aluminum are milled, reamed, or bored into the finished tooling which is used by other machines-- such as drill presses-- to reproduce piece parts. The optics feature permits precision positioning so that the operator is relieved of the need for much measuring, compensating and re-positioning of each fixture as he works on it.

### MICROCIRCUIT OUTPUT UP

May was a banner month in EMR-T's Microelectronics Lab. Microcircuits produced during May, totaled 3,674-- a record month, according to Lake Brown, head of our Microelectronics Lab. Among the jobs completed was the shipment of the balance of EMR-Photoelectric's order for 1000 high voltage resistor microcircuits for use with the photomultiplier tubes produced by the EMR facility in Princeton, N. J.

### SPORTS CORNER

#### MIXED BOWLING LEAGUE

1st Place: A. Sass, P. Milo, G. Butler, B. Lang

High Game, Men: T. Toler, 212; Series: T. Toler, D. Gray, 565.

High Game, Women: G. Proper, 187; Series: G. Proper, 525.

#### GOLF LEAGUE

Tuesday	Thursday
1st - Pakish/Pakish	Ritenour/Bodycote
2nd - Goodrich/Hammond	Haugh/Haugh
3rd - Young/Wollenberg	Clark/Brady

SOFTBALL

1st - Yoder Bros.
2nd - EMR-T
3rd - Ebersole Sod

## NAMES IN THE NEWS. . .

A group of 7th grade science students from Incarnation School visited EMR-T recently. Bill Waggener, of Systems, gave the boys a look at our advanced technical capabilities. In the group were Mike Walter (son of Bob Walter, of Quality Assurance) and George Gardner (son of Ron Gardner, Accounting).

Bill Waggener has devoted many hours of his own time to teaching science to 7th and 8th graders at Incarnation School during the current school year, as a voluntary activity without pay.

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Two EMR-T men discussed career opportunities with three Sarasota High School classes recently. Arnie Rounds, of Fabrication, and Don Roberts, of Production Test, spoke to a large group of students about training for jobs in electronics and machine shop areas. Arrangements for the very effective career talks were made by SHS English Teacher Beth Bloechl, wife of Frank Bloechl, of Manufacturing Engineering.

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Helen Poirrier, of Printed Circuit Fab, is off to England with her family, thanks to a free trip won by her husband. Edward Poirrier, head of the Tampa Tribune's Circulation Department in Bradenton, won an all-expense-paid one-week vacation for two in a circulation contest. The Poirrier boys (Keith, 10, and Kevin, 8) are flying to London with their parents today!

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Sarasota High School Distributive Education students visited EMR-T last week, accompanied by their Advisor, Mr. Robert Tipping. Jay Volpe and Andy Foppe, of Marketing, were hosts to the Seniors for a plant tour and briefed the students.

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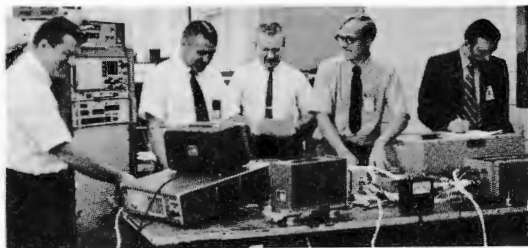
Don Roberts, Manager of Production Test, has been named to the Advisory Committee for Electronics for the Manatee Area Vocational and Technical Center. The advisory group serves in a consulting capacity and is recommending post-graduate electronics training courses for the Center.

## SHIP AIRBORNE SYSTEM FOR HELICOPTER TESTING

An EMR-T airborne system which will be used in U. S. Army helicopter testing has been delivered to the U. S. Army Aviation Systems Test Activity at Edwards Air Force Base, Calif.

This airborne equipment consists of two EMR Signal Conditioners, an EMR FM Multiplex System, plus a PCM unit, Time Code Generator and Tape Recorder. The airborne system conditions data coming in during flight testing; FM and PCM multiplexes the data; and stores the information on tape for processing on the ground.

The contract calls for EMR to supply the U. S. Army with a large Advanced Instrumentation and Data Analysis System (AIDAS). In addition to the airborne system, EMR will supply a central automated telemetry ground station for processing flight test data, and a remote ground station, van-mounted for mobility in traveling to helicopter test sites. EMR-T is



Acceptance testing EMR's airborne system for an Army helicopter flight testing system are: Dick Haase, Tom Lynch, of U. S. Army Aviation Systems Test Activity at Edwards AFB; Carl Steineckert, Wiley Dunn, and Don Shumaker.

providing the telemetry instrumentation, and EMR-Computer is supplying two Model 6135 high-speed Digital Computers.

The EMR system will process data for parameters such as helicopter air speed, altitude, temperature, pressure, fuel, angles, control positions and vibration.

## L-1011 TELEMETRY/COMPUTER SYSTEM SHIPPED TO LOCKHEED

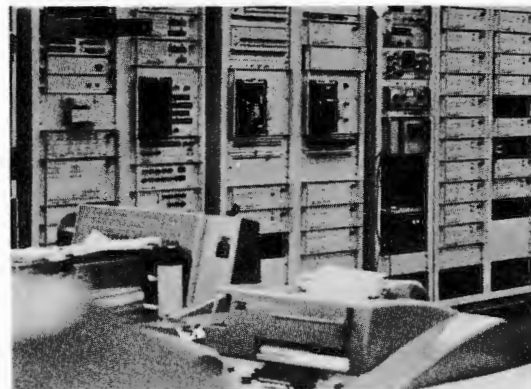
continental range flights where the bulk of air travel growth will occur during the 1970's and beyond. Extended range versions will span the oceans.

In Sarasota for acceptance testing of this large system during May were Group Engineer Hugh J. Cail and Senior Engineer Michael E. Wilson, both of Lockheed-California's Ground Station Group, Numerical Analysis Department, Commercial Engineering.

During L-1011 flight testing, the EMR system will process data concerning parameters such as pressure, temperature, vibration, strain, valve and control positions, etc., from over 1300 data points in the aircraft. The system includes many EMR 4000-series computer-controlled constant bandwidth discriminators and EMR 2700-series modular telemetry processing equipment. These equipments prepare the recorded data for entry into the computer under program control by

the computer. Processed data will be simultaneously sent to display equipment and recording equipment compatible with other computers which perform more analysis on the data.

Additional EMR equipment soon to be delivered to Lockheed-California for L-1011 flight data processing includes a quick-look van-mounted mobile telemetry station.



Partial view of L-1011 T/C system.