Plant Tour: Systems and Applications Engineering

Systems and Applications Engineering is the technical arm of Marketing. Acting as technical liaison between Fairchild and its customers, the department, under the directorate of **Bob Ulrickson**, is responsible for matching the division's products to customer requirements and helping these customers use the products to the best advantage. Being aware of all the product lines, Systems and Applications Engineering personnel can ensure that the customers get the optimum semiconductor complement for their systems — systems which may range from toys to calculators. In essence, the department is an "internal customer" for all Fairchild products.

Systems and Applications Engineering is divided up into four functions — product planning, product support, systems analysis, and customer assistance.

Being in constant technical communication with all the different types of systems into which Fairchild products go, the department is the logical overseer for the formal New Product Planning System. By means of this system new semiconductors and subsystems for all product lines and market areas are defined in a manner which optimally matches operations' capabilities and capacity to the needs of the marketplace.

Product Support involves the generation of technical information which is used to help the field sales engineers to sell the product and the customers to use it. The information includes Application Briefs, Application Notes and Product Manuals. The product support function also includes seminars, technical articles in magazines and assistance with data sheets and advertisements.

Systems Analysis is an important, continuing function of the department. Electronic systems of all kinds are analyzed with a view to semiconductor usage. Systems involved may be as simple as an AM radio or as complex as a computer. Systems Bulletins are generated to help the field sales engineers in discussions with customers and give him a feel for the customer's system requirements as they relate to Fairchild products.

Customer Assistance involves day to day contact with customers, answering technical inquiries about products and helping them with any problems they may have in designing Fairchild into their products. This function can also include building experimental circuits for customers, performing computer simulations of their systems and evaluating their finished products.

Within this framework, there are five groups which perform applications functions.

Bob Hood's Automotive Applications group has identified about fifty electronic functions within the automobile that will require many semiconductor devices to solve the problem of reducing pollution and making our cars safer as well as more convenient to drive. The group is using its own test car to prove out circuits which may result in a 50,000 mile maintenance-free automobile.

The Digital Systems section, headed up by **Peter Alfke**, did the logic design for most of Fairchild's MSI circuits and the MOS Calculator chips. This group works closely with DIC, SIC, and MOS Engineering and Product Marketing to solve customer problems in digital systems.

The Consumer Applications area, under **Norman Doyle**, concentrates its efforts on semiconductor products for radio and television receivers, video tape recorders, electronic organs, stereo equipment, toys and other home entertainment electronics. The Consumer group has built a facility called the "CARE" room (Component Application and Reliability Evaluation) which is used to test television sets containing Fairchild ICs and discrete devices for several TV manufacturers.

Package Applications is a one man group. **Lee Marley** works with Operations and Fairchild's many customers to answer questions relating to device packages. The Fairchild Package Coding Bulletin is Lee's responsibility. It is made up of two documents for discretes and ICs describing with drawings the various packages Fairchild puts out.

"Everything else" might be the best way to describe the applications work done by **Bob Ricks'** Instrumentation and Interface Systems group. The group works primarily in support of Linear Circuits and Discretes, but must be versatile enough to solve the customer problems that fall between analog and digital. Some of the group's recent projects have included electronic watches and clocks, telephone circuits, phase locked loops, and analog multipliers.

Overall, Systems and Applications Engineering is responsible for discovering semiconductor requirements, initiating the development of the devices to meet those requirements and lending technical support to the sale of those devices.

John Springer and Rich Whicker await the output of a logic simulation from the computer.
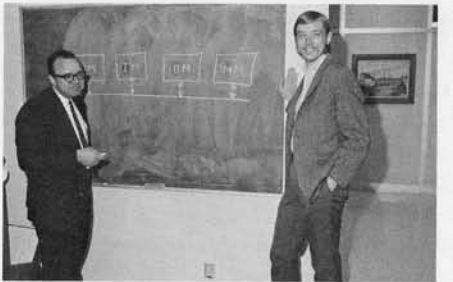

Marvin Vander Kooi uses the Wang Calculator.

Bob Ulrickson and Lee Marley check some of Fairchild's many semiconductor packages.

Bob Trabucco, Bob Hood and Rob McFarlin observe Dave Krupp putting the finishing touches on the electronic fuel injection system in the Automotive Applications test car.

John Nichols and Mogens Ravn of Digital Systems discuss a digital controller concept using LSI.

Ken True and Bob Tuttle work on a touch-tone decoder for telephones.

Grace Cole and Bob Ulrickson check the Applications Progress Report.
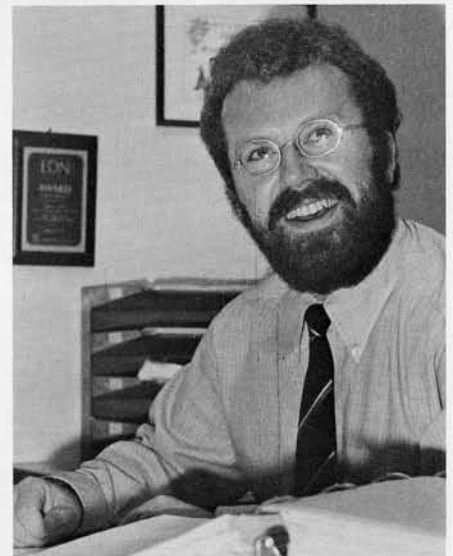
Suleyman Sir examines I.F. strip for FM stereo receiver.

Bob Ricks and Moise Hamaoui of Instrumentation and Interface Applications investigate a problem in a phase lock loop circuit.

Peter Alfke and Eric Breeze of Digital Systems demonstrate Applications' electronic organ design.

Norman Doyle, Consumer Applications Manager, pens another prize-winning memo.

Tony Brooks checks out TV receivers in CARE (Component Application and Reliability Evaluation) facility.

Rodney Smith works with breadboard of the latest Veeble fetzer.

Tony Brooks and Halfon Hamaoui, Consumer Applications, demonstrate an on-screen TV channel number display.