HARRIS

INTERCOM

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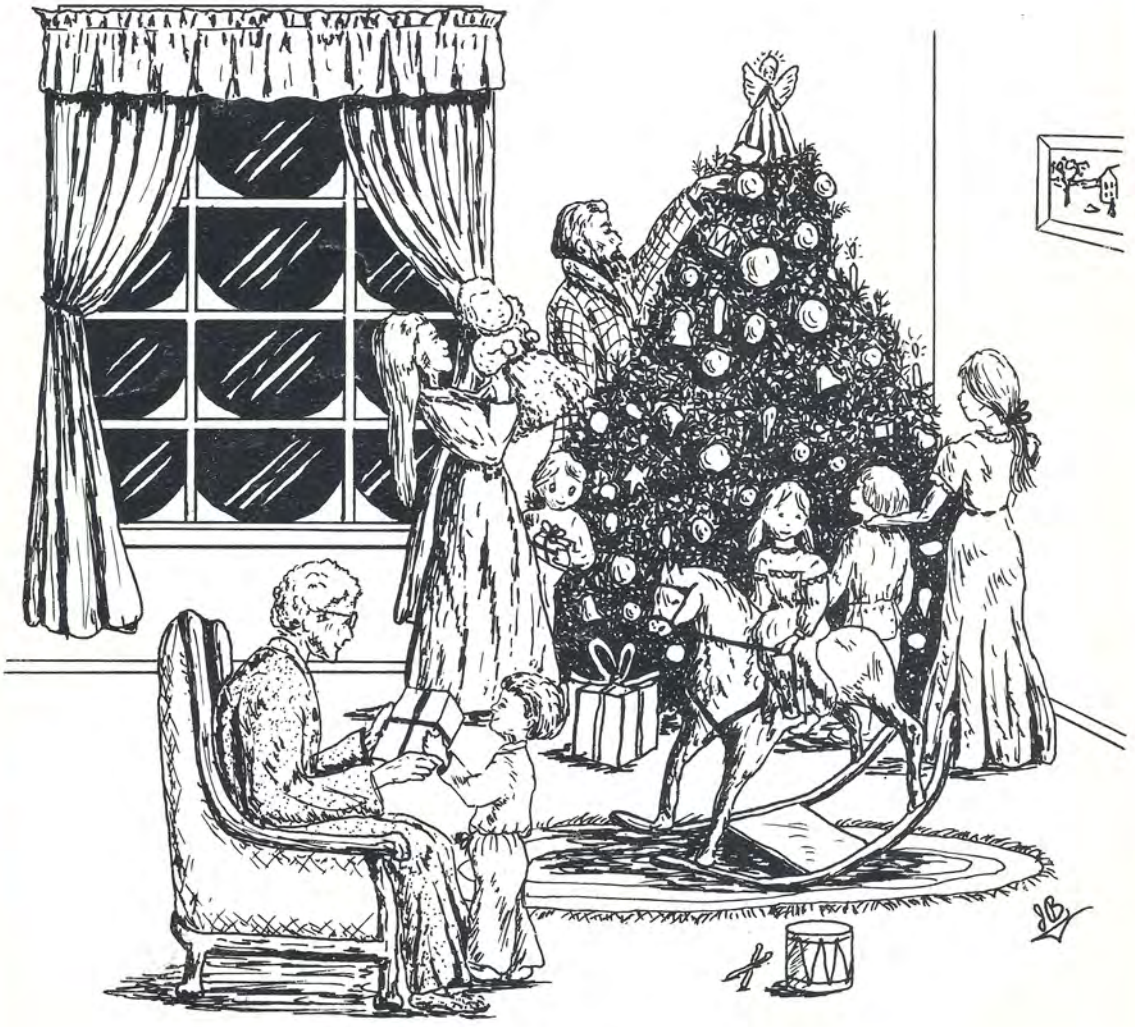
HAPPY HOLIDAYS



FROM
HARRIS

GUEST COLUMNIST

WHAT'S AHEAD IN BROADCASTING

Dan Maase

During the last ten to fifteen years, the radio and television broadcaster has witnessed a transition from technological mediocrity to sophistication in the equipment used to provide the broadcast service. This trend to greater sophistication has had a part in maintaining the broadcaster's growth and enhancing his competitive position. New signal processing techniques have appeared which increase AM radio loudness while improving quality. Recent technology has also brought loudness improvements to FM. Automation has become practical by virtue of the microprocessor. Television technology has taken great strides from the birth of local color origination in the early 1960's to virtually 100% color broadcasting, E.N.G., new videotape recording formats and circular polarization.

Radio and Television broadcasting at the start of the decade still employed many technologies born in the early fifty's. The advent of the silicon transistor and evenutally the low cost integrated circuit opened up new possibilities to the circuit designer. The designer now uses these new devices to accomplish signal processing tricks impossible before due to cost or physical constraints. Use of operational amplifiers, analog multipliers, microprocessors and semiconductor memories have allowed development of "smart" limiters, multiband automatic gain controls, special effects generators, noise reducers and versatile, reliable automation systems.

The transmission side of the radio business, once thought to be technologically stagnant, has undergone substantial change. New means of modulation such as PDM have brought improved performance and efficiency to AM broadcasting. Improved semi-conductor technology has allowed cost effective AM transmitter designs to the 1 kW level. The trend is toward higher efficiency and elimination of as many vacuum tubes as possible. It is possible that within two years, semiconductor technology will allow design of practical solid state transmitters to the 10 kW level. However, such transmitters would command a premium price.

FM broadcasting has come of age during the decade and competition among the broadcasters has pressed the equipment manufacturer to improve performance of FM systems. However, ultimate performance will not be achieved until exciter-type performance exists at the output of the FM transmitter. This will be achieved in the future through the development of broadband solid state amplifiers and new broadband vacuum tube amplifiers.

The competition between AM and FM has kindled new interest in AM stereo in the last year. During the next year the FCC will adopt a system and there will be a flurry of activity as the AM broadcaster rushes to go stereo. This new medium will improve in subsequent years such that quality will rival FM stereo. The AM stereo system that is adopted will be able to support this evolution in quality and will be structured such that coverage in stereo will be good and occupied bandwidth constrained within today's legal limits.

Television transmission systems have seen second generation transmitters in the last decade. The terms intermediate frequency modulation and SAW filter have become familiar. The latest generation of vacuum tubes, coupled with new semiconductor technology, has allowed reductions in the number of vacuum tubes employed in TV transmitters resulting in simpler designs. This evolutionary change will continue to higher power levels for circular polarization requirements. As modern solid state amplifiers are employed, reduction in tube count will enhance performance and minimize maintenance costs.

Satellite transmission, the newest means of relaying basic audio and video program information to the broadcast facility, will find wider application in the near future. As hardware cost decreases, satellite transmission may promote creation of new program networks. Satellite communication will not prove to be a threat to broadcasting in its present form in the foreseeable future. The alternative, direct satellite to home transmission, will not become feasible until reliable, very high power satellites and very low cost earth terminals can be implemented.

While the last decade has provided exciting new technologies for broadcasting, the future appears to promise no less. Digital audio, digital video, automation, single tube transmitters, solid state transmitters, circular polarization and satellite transmission will play a significant role in future operations to enhance the broadcaster's competitive posture.

PATENT AWARD LUNCHEON

A patent award luncheon was held November 28, 1978 at the Quincy Country Club for the presentation of awards to inventors who have had patents awarded or applications for patents filed at the U. S. Patent Office. Dan Maase presented awards to Geoff Mendenhall for two newly issued FM Exciter patents entitled "Automatic Phase Controlled Pilot Signal Generator" and "Multichannel Modulation System Including An Automatic Gain Shifter".

Two of our engineers received awards for filing applications: Dave Hershberger for his applications entitled "Asynchronous AM Stereo Receivers" and "Switching Modulators and Demodulators Utilizing a Modified Switching Signal". Chuck Smiley for his application entitled "Direct Function AM Stereo Exciters and Receivers".

Any Harris employee can disclose an invention or a novel manufacturing process by filling out Patent Form 6 and submitting it to the Division Patent Specialist, Chuck Smiley. New ideas will be considered for patentability by the patent committee whose members are Gene Whicker, Dan Maase, Dick Cutter, and corporate attorneys, Chuck Krawczyk and Harry Fleck.

Attending the patent Award Luncheon were from left to right, seated: Chuck Smiley, Dave Hershberger and Geoff Mendenhall, standing: Gene Whicker, Dale Bostrom, Andy Juettner, Dan Maase, Bob Vaughan, Bob Weirather and Terry Hickman.

GENERAL MANAGER'S REPORT


G. T. WHICKER

John Hartley, President of Harris Corporation and John LeMasters, Vice President-Group Executive of the Communications Group visited Broadcast Products December 14 for the annual Mid-Year Review. During the day they met with key company executives for discussions on overall division performance, and on specific progress and problems within the division. As a result of this meeting a list of progress and problem items was agreed on, and presented to the division management group at a dinner meeting.

As this list is indicative of how we and the corporation view our performance in the first six months of 1978/79, I would like to give you a rundown on the items.

I'm happy to say that division financial performance was the number one progress item. We are exactly on plan for new orders and shipments, and slightly ahead of plan on profits. This is a dramatic improvement from last year at this time, and gets us back to the excellent position we were in prior to last fiscal year.

The second progress item was expense and cost control. You have all been doing an effective job in this area, and it has been a major factor in getting us back to good financial performance.

Items 3, 4 and 5 were, briefly: TV RF products new orders, shipments and profitability—all ahead of plan and up considerably from last year; inventory—down from last year and very close to meeting our year-end objective; and major program performance—a good increase in profitability. Furthermore, all of our major programs customers are very pleased with our performance.

The current number one division problem is that new orders and shipments of video products are behind plan. However, our current outlook for camera orders is improving for the rest of the year, and should be further helped by intensified sales efforts, and by the improvements on our TC-80 camera that will be introduced shortly.

Second on the problem list—international new orders. We have run into some special problems of political instability in Iran and of financing difficulties in Nigeria, which have put us behind at mid-year. However, we have recently signed several significant new contracts which should be booked early next calendar year. This should put us over plan for the year. Because of a lack of qualified candidates, we have not been able to staff some key positions in Marketing and Engineering, and this was rated our third most important problem. We are currently making extra efforts in recruiting to correct this.

As we move into the second half of fiscal 1978/79, we are in a very strong position to exceed our annual operating plan. Our domestic orders are holding up well; the outlook for international orders is good for the rest of the fiscal year; financial performance is right on plan; and, we are more than pleased with industry acceptance of our new products. I know that our expense and cost control program has caused heavy workloads in some administrative areas, but this is a vital part of keeping the company sound—and you have done an outstanding job in implementing the program. As a result, we are going into 1979 in a healthy position and with an optimistic outlook.

Now we are all looking forward to the holiday season, and to being with our families and friends. It's the best time of year, and I wish you much enjoyment—with a very merry Christmas and a healthy, happy New Year.

NEW FEATURES FOR THE HARRIS TC-80

In the near future, you will be seeing new features added to the Harris TC-80 Color Television Camera. New Diode Gun Plumbicon® tubes were introduced on the TC-80 camera at NAB '78. These tubes, the most useful recent development in broadcast pickup, have demonstrated better resolution or picture sharpness with less electronic correction necessary to produce sharp, crisp pictures. Lag or low level image retention has also been improved. These Diode Gun tubes retain their high quality characteristics with more beam current flow than was previously possible.

Harris has solved another problem that has plagued all cameras throughout the industry. A Highlight Handling system has been added to our camera to eliminate comet-tailing and blooming that result from reflections or overexposures. One needs only remember the last Oscar Awards or the Miss America Pageant to recall myriads of comet-tails streaming across the pictures from oscars, sequins, crowns, mircophones, or stage lights. In fact, spot reflections from eyeglasses and metal frames are a common problem in newscasts. The Highlight Handling system now virtually eliminates these problems at the flick of a switch. By being able to handle highlights over 10 times normal picture level in any color, this adjustment-free circuit can pull crisp detail out of shots that were previously impossible.

These new features of the Harris TC-80 camera maintain the TC-80 in the forefront of performance technology and will be added to production cameras mainly by replacing one PC board in the camera head. Kits will be offered for sale to present owners of TC-80s so they may update their cameras.

AGAIN, TECHNOLOGY PLACES HARRIS FIRST.

DOMESTIC SALES TEAM

At the present we have 28 sales managers covering the United States and parts of Canada, selling Harris Broadcast Products to more than 9500 radio and tv stations. To acquaint you with these men we are printing the pictures that were taken at the October sales meeting that was held here in Quincy.

We will list the names and the states in which they live.

Radio, East Group: Bob Hallenbeck, New York, Will Bone, Alabama, Fred Kanengeiser, Ohio, Gene Bidun, Maryland, Hal Kneller, Connecticut, Ivey Raulerson, Florida, Bill Harland, Michigan, Red Lowder, South Carolina and John Harper, South Carolina.

Radio, West Group: Dave Evans, California, Gary Lake, Washington, Walt Rice, Illinois, Galen Hassinger, Nebraska, London England, Texas, Bob Gorjance, Wisconsin, Rick Stevens, California and Curt Lutz, Oklahoma.

TV Group: Lew Page, Maryland, Charley Coyle, Illinois, Tom Schoonover, Michigan, Bob Gauthier, retired, Vern Russell, New Hampshire, Vern Killion, Texas, Tom O'Hara, California and Leo Gilbeau, Canada. Terry Brown, Canada not available for picture.

These men are a sales team of which we can all be very proud. By comparing the first quarter of 1977/78 FY to the first quarter 1978/79 we come up with some remarkable facts. Our TV sales force is responsible for a 76% increase, our RADIO sales force shows a 25% increase and our CANADIAN sales force has contributed a 6% increase. We are looking forward to continued success throughout the remainder of this year. Early indications are that we will repeat our 1st quarter success in the second and third quarters of 1978/79 FY.

We of the DOMESTIC SALES FORCE, wish you and yours a Merry Christmas and a Happy New Year!!

HARRIS EQUIPMENT SHOWN BOGOTA, COLOMBIA

As the pictures indicate, much interest was expressed by broadcasters from several neighboring countries as the Harris equipment was shown at the trade show in Bogota, Colombia. Harris equipment included in the display was an audio console, a cartridge machine, a MSP-100 processor and a MS-15 FM exciter. Participants from all over the world, including the Iron Curtain countries had products on display also. All American participants were under the auspices of the US Embassy.

Picture at the right shows Dr. Vivas, the President of Ciro Vivas Cia., Ltda. our exclusive representative in Colombia with E. L. Corujo, Manager, Latin America.

FIRST MW-50A INSTALLED IN SAUDI

Nuzla Radio Transmitter Station at Jeddah, Saudi Arabia is the new "Home" of the 1st MW-50A installation in Saudi. Harris completed a full "turnkey" operation which included the remodeling of the transmitter room, installation of new central air conditioning, new lighting fixtures and new ceiling.

Installation was complete and the Ministry of Information had its station on the air the first week of November, 1978.

BUENOS AIRES CONTRACT

In October of this year, Harris Broadcast Products received a contract from Channel 7, Buenos Aires, Argentina for a complete television transmitting system. This system includes a 25 kW TV transmitter plus a 5 kW TV standby, a batwing antenna and all accessory equipment necessary for the complete operation of the transmitting facility.

Shown at the signing of the contract from left to right, standing: Ing. E. Flomenboim and Ing. C. Zamparini; seated, G. M. Haines, Harris Controller, A. R. Barreto, Administration Channel 7 and E. L. Corujo, Director Latin America.

RE-GROUP OF COMPONENT ENGINEERING - ADDED PURCHASING POWER

The recent change of Component Engineering reporting and realigned objectives are fundamental in adding to the purchasing power of Harris. With the addition of John Delay and the objective of second sourcing of all components used by HBPD, the purchasing Dept. under Rick Parise takes another step in dealing with vendors through added negotiating power. Thus allowing improved pricing and better delivery schedules. The basic job function of the department still remains the same, second sourcing of all components, researching and recommending new components to replace obsolete items and writing ECNs where necessary to incorporate these changes.

It shall also be CE's objective to solve component related problems which occur in the field, test lab or production. In addition, they will write test procedures for the Receiving Department. In order to accomplish these tasks, an up-to-date library of vendor information will be maintained and documentation of component problems will be kept in a history file.

The department will also be recommending and making addendums to the new Components Standards manual which will help the design engineers in recognizing standard components more readily. This will reduce the number of active part numbers in our system and increase quantities on the part numbers which we purchase. The direct result will be . . . better quality - lower cost - improved delivery schedules.

RETIREMENT

December 15, 1978 was the date Audrey Wittler picked for her retirement from Harris after some 23 years of service to this division. Nibs Jochem has provided Audrey with some great surprises over the span of years that she worked as his secretary, but this cake was certainly one of the sweetest. We wish Audrey many years of pleasurable retirement and hope to see her at all Company activities in the future.

CARDS

Sophie Muse, 7 year old daughter of Joe Muse is in St. Mary's Hospital undergoing treatment for injuries sustained when she was hit by a car on December 13, 1978. Your cards will be appreciated.

TECHNICAL SEMINARS ANNOUNCED FOR '79

Rex Sandidge, Mgr. Customer Training, is announcing the 1979 schedule for Domestic Customer Seminars. Notice went out to our customers the last week of November and a number of registrations have already been received. If you are interested in these seminars please advise Rex in the near future as he is expecting a very heavy enrollment in these sessions.

Domestic Customer Technical Training Seminar Schedule
Calendar Year 1979

RADIO

January 23 - 26	MW-1A
February 5 - 9	MS-15
March 13 - 16	MW-5A
April 24 - 27	MW-50A
May 7 - 11	*SC-90 I
May 14 - 18	*SC-90 II
July 17 - 20	MW-1A
August 20 - 24	MS-15
September 11- 14	MW-5A
October 23 - 26	MW-50A
October 30 - November 2	MSP-90
December 3 - 7	*SC-90 I
December 10 - 14	*SC-90 II

*SC-90 I Operations, Programming and System Fault Bypassing Techniques

*SC-90 II Maintenance
(A fundamental understanding of digital circuitry should be possessed by those who participate in this seminar)

TELEVISION

February 19 - 23	TC-80
March 5 - 9	High Band (H1 Series) TV Transmitters
April 30 - May 4	High Band (H2 Series) TV Transmitters
June 4 - 8	Low Band (L1 Series) TV Transmitters
June 18 - 22	Low Band (L2 Series) TV Transmitters
July 9 - 13	UHF Band (U Series) TV Transmitters
August 6 - 10	TE-201/301
September 17 - 21	UHF Band (U1 Series) TV Transmitters
October 1 - 5	TC-50A
November 5 - 9	High Band (H2 Series) TV Transmitters

The H2 Series Television Transmitter Domestic Customer Seminar was held October 30 - November 3. Participants are shown from left to right: Karl Jesness - Harris, James Foley - WCIQ, Birmingham, Al., Jim Boyd - WCIQ, Raymond Goodrich - WIIC, Pittsburg, Pa., Joe Manning - KAET, Tempe, Az., Vic Turner, KAET, Louis Tysver - KPAX, Missoula, Mt., John Parker - WIS, Codumbia, SC., Ray Hutchinson - KBYU, Provo, Ut. and Jerry Powell - Harris.

H-2 TV Transmitter Seminar

Service Awards

30 YEARS

Robert Strode

25 YEARS

Jack Eliason

James Mayfield

Jim Winking

5 YEARS

Jacqueline White
James Eickelschulte
Marilyn Dooley
Ray Griffin
Robert Dobbs
Stephen Cane
John Deemer
Reita Hesse
Kent Bunte
Billy Jackson
Pat Friday
Rodney Nolte
Donald Hert
Gene Semon
G. James Keller
Mike Russell
Walter Deen

15 YEARS

Catherine Drummond

Roger Job

Richard Farr, Jr.

10 YEARS

Charles Cosgrove

Birney Fletcher

1 YEAR

Dennis Sloatman
David White
Les C. Brown
Joe Dobrowolski
Charles Coyle
Chris Brown
Stan Weber
Margaret Donoven
Rick Rubendall
Greg Edlund
Dale Kieselhorst
Kim Stevens
Richard Jacob
Brian McCorry

NEW EMPLOYEES

Terri Angell
Washington Office

Lynda Baker
Office Services

Terry Brown
DSM-Canada

Karen Colvin
Purchasing

James Crain
Mgt. Inf. Systems

Sandra Cray
Data Processing

Richard Cutter
Finance Adm.

John Harper
DSM-Radio

Fred Kanengeiser
DSM-Radio

Sheila Shaw
Personnel

Robert Spaun
Dom. Service Pts.

Miss Hap says,
"DON'T FALL FOR AN ACCIDENT!!!"

HARRIS CORPORATION Broadcast Products Division
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