

CROWN CRITER

Since 1971

Crown International, Inc. Employee Newsletter

October 1994

The Crown Semi: An Audio School on Wheels

by Bruce Bartlett, Verne Searer, Libby Marshall

The huge, black semi trailer with the white Crown logos and red sound waves on the sides impresses a lot of people. But the world of sound inside the trailer has fascinated Crown reps and associates in forty-eight states and Canada. It's a multimedia classroom and audio facility on wheels. We use it to teach people about our microphones and amplifiers — what they can do, and how to use them. It's also a classroom for our IQ System, and can function as a remote technical lab.

The 3-phase power distribution in the truck is enough to power three houses. One of each amp model made by the Audio Division is mounted in a mobile wooden rack. Underfoot is lush carpeting, and the walls are lined with removable wood panels which contain in-wall speakers. A touch-screen computer system controls the amps, and there is a large rear-projection screen for slides, video, and high resolution computer graphics. This truck conveys to customers that we are serious.

The Crown semi is a comfortable, yet intense, learning environment. We can get the undivided attention of prospective clients or students in a controlled demo situation. Jim Stembel, Audio

drew a crowd of employees last summer with an "open truck." Some employees saw computer diagnostics in action. Dan Kreiser, an Audio Technician, walked up to the rack and asked, "What's wrong

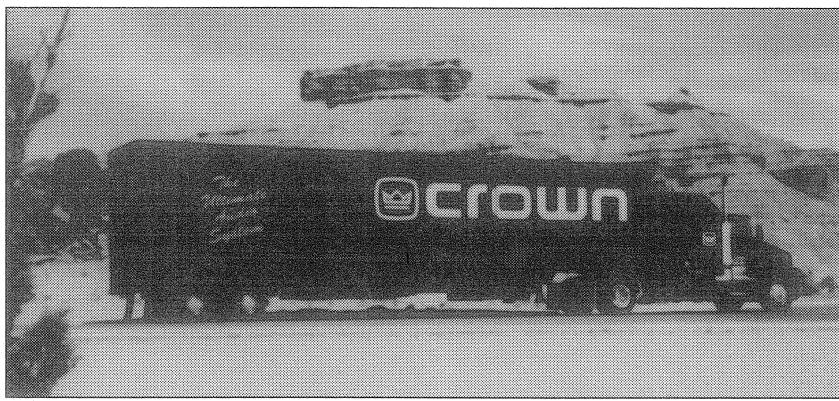
with this amp?" The bar meter on the computer screen indicated an "output device emulator protection" (ODEP) in distress. Dan found one amp hot to the touch. With a few minutes of computer diagnostics, Jim Stembel isolated a shorted amp output, the cause of the problem.

The semi has already paid for itself by helping

us sell Crown systems to several customers. Some of the biggest:

- Astro World in Houston
- Disneyland parade route in California
- Brendan Byrne Arena (Meadowlands, home of the NY Giants and NY Mets)
- Six Flags Astroworld, Houston

Requests for the truck come in daily from as far away as Australia and as close as an Elkhart IQ school. ☺



Field Liaison Manager, admitted that "When I am in the trailer, I sometimes forget what city I am in." Customers can watch demo videos, listen to various amps, or get hands-on practice with the IQ System.

The mobile facility is used almost daily 47 weeks of the year. It draws big crowds at major trade shows such as AES, NAB, NSCA and INFOCOM. It

Crown International Ratings

Sound & Communications 1994 Contractors Survey

(July 1993 - June 1994)

- # 1 Manufacturers With Best Relationship
- # 2 Best Value
- # 2 Most Reliable Brands
- # 5 Top Selling Lines

The Music & Sound Retailer September 1994

Top Ten: Power Amps

- # 1 Crown PB-1
- # 6 Crown PB-2
- # 8 MacroTech 2400
- # 9 MicroTech 1200
- #10 PowerTech 1

A Letter from Franz Nabicht Camp Director, LaSalle Council, Boy Scouts of America:

I want to recognize and thank one of your employees, Roy Pickler, for providing adult leadership at Boy Scout Camp this past summer. Because of his unselfish dedication to the Scouting program, the Scouts under his guidance were able to enjoy a fun filled week of Scouting experience at Camp Tamarack.

Roy has given of his time and talents to make Boy Scout Camp possible. Roy works with each individual Scout to develop a schedule that will meet the Scout's needs for merit badge work, skill development, advancement completion and personal growth.

Roy also spends countless hours helping boys in his community throughout the year to help these boys grow into adults and good citizens. Roy is providing a positive influence.

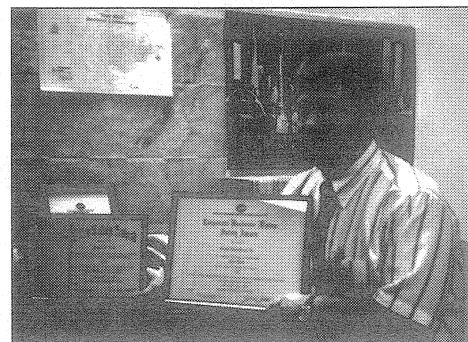
Editor's Note: The Boy Scout District Roundtable named Roy "Scouter of the Month" for Elkhart County" at their meeting November 8th.

Roy is among a group of special people who work in the Scouting program.



Front, L. to R.: Kate Pickler, Stormi Bird, Camie Charlton; 2nd Row: David Pickler (behind flag), Clay Barclay, Jr., Tyler Bird, Tom Barclay, Pam Pickler; Back: Jason and Roy Pickler, Terry Bird, Scout Commissioner Webb Anderson, Tammy Perry.

Flies High, Lands Safely

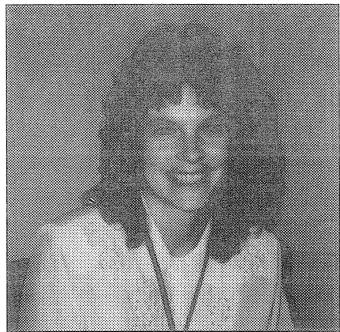


Bob Zook

In August the National Business Aircraft Association awarded Crown International the Corporate Business Flying Safety Award for operation of our King Air Beechcraft plane safely for four years. This was a total of 1,452 flight hours.

Pilot Bob Zook received the Pilot Safety Award for piloting the eleven-passenger, twin turbo prop a total of 2,500 flight hours in 1993. Actually Bob's safety record with the corporate plane represents four and a half years of safe flying for Crown, and more than eleven years as a professional pilot. ☐

New Benefits Manager



Ann Frantz

The Human Resources Department announced the hiring of Ann Frantz as Benefits Manager, September 21st. Ann comes to Crown International with extensive experience as a benefits plan consultant. She was an employee benefits specialist with Crowe Chizek and worked with consultation, design, funding and administration of health, welfare and retirement plans. She is a Certified Public Accountant and a graduate of Indiana University with a degree in Business Administration. ☐

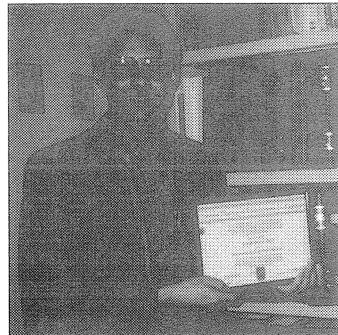
MAMA - New Rep Organization

by Cindy Swald

"Mo is Mama's boy!" was the Audio Sales Department's send-off tune for Maurice Paulsen, former Central Regional Sales Manager. Mo now works for Janine Masten, President of Mid-America Marketing Associates, Inc. (MAMA, Inc.). MAMA joined the Audio sales representative organization September 26.

Janine, Mo, Joel Kaplan, and secretary Debbie Porter in Chicago represent the Illinois and Wisconsin territory. Janine was former Director of Sales and Marketing at Electro-Voice and Worldwide Director of Sales for THX. While Mo is missed here at Crown, he is off and running with MAMA, Inc., which is organized for action. ☐

The Environmental Elite



Tim Bock

The National Registry of Environmental Professionals designated Tim Bock as a Registered Environmental Manager (REM) September 30, 1994. Tim earned his credentials after passing a comprehensive exam September 1st. Qualifications to take the exam include three years of management responsibility for environmental affairs, a Bachelor of Science degree and civic involvement. A local chapter of NREP is being organized. NREP is setting standards for environmental professionals in the areas of ethics and qualifications for inspectors. ☐

How has technology changed the way you do your job?

Data Flow Changes Course

by Jan Smith

Ten years ago Linda Lovitt key-punched cards which input data into the Crown International main frame computer. Today she is Technician Service Computer Operator for the AS400. Operators in other departments make her job easier by doing the data entry step at their own terminals. Advances in our network technology have changed Linda's job so that it is similar to an air traffic controller. Instead of watching airplanes, Linda watches and reacts to the information coming and going out of the main computer. She prints and distributes data, but she's glad to let our fingers do the typing. ☐



Linda Lovitt and Mary Miller face the AS400.

Orders in Half the Time

by Cindy Swald

Mary Miller has been Order Entry Specialist in pro audio North American Sales since 1976. Personal Computer (PC) technology changed the way Mary enters orders into the manufacturing system. She used to write orders on pieces of paper and send them to Linda (Paris) Lovitt in the computer room to be key punched into the National Cash Register (NCR) main frame computer. Linda (and others) then typed and printed acknowledgements. Now PCs generate acknowledgements in the Sales offices.

It is easy to research product inventories and delivery times with "Inquiry Screens" in the Materials Requirements Planning (MRP) computer system software we now use.

Facsimile (FAX) telephone communication speeded order entry time by eliminating mailing and writing of phone orders. Turnaround time on order entry is twice as fast as the 80s. We can better serve the customers of the 90s. ☐

The latest change is Manufacturing's new digital camera. It photographs the product and the picture goes right into the computer. You can adjust the lighting or contrast of the image you see on the computer monitor. You don't have to wait for developing and printing. ☐

Pagemaker Breakthrough

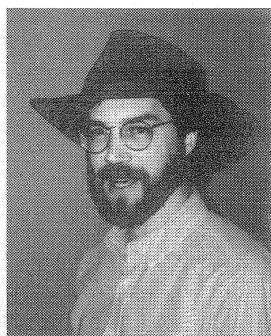
by Bruce Bartlett; comments by Dave Harris

In the old days of publishing newsletters and manuals, it took a lot of people to do the work. Photographers took photos. Writers wrote copy and sent it to a typesetter. The keyliner laid out the text and photos. Once they mechanically put together the publication, it was a pain to make major changes.

Then came a breakthrough: the Pagemaker page layout program, which brought desktop publishing to inexpensive computers. Using Pagemaker, one person can do the writing, typesetting and layout. It's easy to change the layout or text. You can work faster, make changes closer to deadline, and control the job better.

Unfortunately, since people know you can do those things, they tend to bring you a lot more changes! You wind up doing a lot more work. There's more stress. There's even a new market for stress-relief toys!

One major new tool we use is software for photo-editing on computer (such as Photoshop). Our scanners scan photos into the computer. Then we use our image-editing software to prepare the photos for publication. With special printer paper, we can get a printout that looks just like a photograph—even with an inexpensive printer.

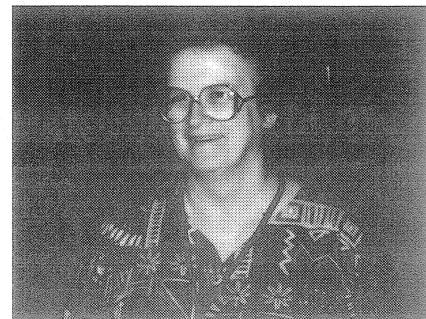


David Harris, Audio Technical Publisher

From Dishwasher to Aqueous System

By Sue Ramsby

"In the late '70s we washed our modules in a dishwasher in the old incoming inspection area in Plant 1," reflected Ruth Overhulser, Coordinator of the Modules day shift. "In the '90s we will install an aqueous system that takes circuit boards right into the washing/cleaning process from the wave solder machine."



Ruth Overhulser

"Hand soldering has given way to the wave solder machine where an entire board is soldered in a few second's time! Components that were cut and inserted by hand are now cut and inserted by the Quad, axial and radial insertion machines. A slide line, which enables assembly workers to slide circuit boards from one point to another, improved production time.

"We used to write changes in module design on paper. Now CAD produced drawings keep us up-to-date on changes to circuit board design." Technological advances have improved production from a rate of 200 hand stuffed and soldered boards per week in 1979, and 400 to 600 per week in 1983, to 2500-3000 boards per week in October 1994. ☐

The President's memo...

We are committed to the implementation of DFT, a major step towards World Class Manufacturing at Crown International. As you know we began with heat sinks in the Fab Department in September. What exactly is DFT? Well, DFT stands for Demand Flow Technology. That's nice to know, but what is Demand Flow Technology?

For the past 50 years most manufacturing companies have depended upon a forecast of future customer demand to drive material flow. This is commonly known as a "push" materials flow system. Material is ordered many weeks in advance of the forecasted customer requirements, and then literally pushed through the manufacturing process to have the finished product ready by the time the customer was forecasted to need it.

In the 1960s the push system was enhanced by computer technology and a software program called Material Requirements Planning (MRP). MRP would accept the end product forecast and then separate the Bill of Materials into its component parts and raw materials. It would then place orders for these various parts and materials to have a time-phased delivery schedule. This meant that material would be delivered, theoretically, as it was needed and not before.

While MRP has benefited many manufacturing operations, the real problem remained that material was still being ordered and delivered on the basis of a forecast of future customer demand. The forecast always seemed to be wrong, particularly in an operation that has a wide variety of finished products as we do.

In the 1980s most companies found themselves facing increased pressure from customers for faster, more timely delivery

of products. Most companies were also faced with high inventories, largely caused by the forecast driven MRP system. Invariably, too much material was ordered for some products and not enough for other products. Why? Because the material procurement plan was driven by forecast of future customer demand. By the time the future arrived, the real customer demand was different from the forecast. This created, simultaneously, inventory shortages and inventory surplus.

During the 1980s many companies began to move towards a "pull" materials flow system. This concept takes the current actual customer demand and sends signals back through the chain of manufacturing operations that demand has occurred, parts and materials have been used, and they need to be replaced. The signal, or kanban, can be accomplished by a number of methods.

DFT is an organized body of knowledge focused on a demand/pull concept of manufacturing. The objective is to produce parts and final devices in small lot sizes on a timely basis driven by real customer demand.

The change for Crown will be both challenging and rewarding as we move into other departments. We are confident that we will see significant positive results in lower inventories and better delivery performance to our customers.

Robert Terry Hammond

by Cheryl Deak

Eight new employees gave the Modules Department night shifts a full crew of 35 on September 19th, for the first time in more than a year. They ran the slide line to stuff printed circuit boards without taking people away from testing, soldering or other responsibilities as they had been doing. With all positions fully staffed, they were able to complete 300 circuit boards that first night. The team could go from one batch to the other, without stopping, just as the day shift does. Bob Caprarotta, who celebrated his first anniversary at Crown October 11, supervises the night crew.

Full Crew



Robert Terry Hammond

The Crown Crier is published monthly to inform employees of customer, corporate, departmental and employee news and progress. News and ideas are always welcome!

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EMPLOYEE COMMITTEE FINANCIAL REPORT

As of October 20, 1994:

Balance in

Checking Account: \$2,210.10

Savings Account: \$1,094.86

Total On Hand \$3,304.96