

CROWN CRIER

Since 1971

Crown International, Inc. Employee Newsletter

May 1995

Techron Amplifiers Return Home to Elkhart's MRI Lab

by Mark Stucky

Six Techron 8607 gradient amplifiers left Elkhart last year and journeyed to the General Electric Medical Systems plant in Waukesha, Wisconsin. There the amplifiers were installed in a cabinet as a "gradient driver subsystem." The subsystem became part of one of GE's top-of-the-line "Signa" magnetic resonance imaging (MRI) systems.

That Signa system, with its Techron amplifiers, was installed in the new addition to Elkhart General Hospital in October of 1994. The permanently installed Signa system replaced the hospital's older, less powerful mobile unit that had been housed in a trailer for five and a half years. Since October, this Signa system has been helping diagnose medical conditions of 11 to 14 patients daily.

Elkhart is fortunate to have the MRI laboratory at Elkhart General. Most communities the size of Elkhart have no local MRI scanner as advanced as the one here.

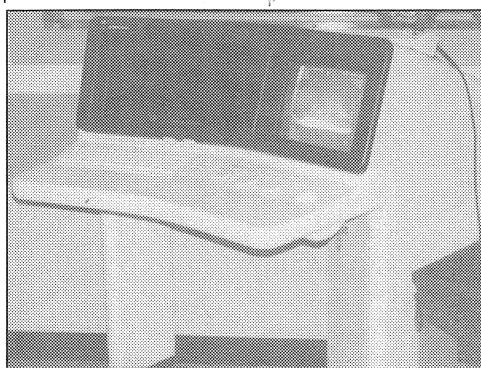
MRI, the most sophisticated and powerful medical diagnostic tool available, provides picture-perfect images of hidden tissues inside a human body. MRI allows doctors to "see" inside a human body without cutting into the patient and without exposing the patient to radiation from X-rays. Not only is it safer, but it provides better information than other methods. For example, MRI's clear images can show blood pumping through an artery, and reveal the exact dimensions and locations of inoperable tumors.

Bill Molen, MRI Coordinator at Elkhart General, said, speaking of this technology, "We can find things that couldn't be

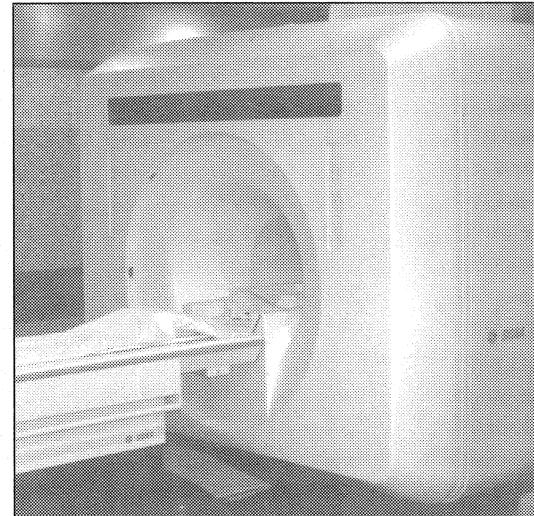
found any other way." Information from the scanner "helps improve the quality of life for patients...and even saves lives."

Molen reported the staff has been very pleased with the quality and power of the new system. "This has much more power than the old system, and more power provides greater image resolution." With greater resolution, images show finer details.

Helping create this greater power are six Techron amplifiers housed together to form the gradient driver subsystem. This subsystem consists of either three or six power amplifiers called gradient amplifiers. An amplifier is needed for each of the X, Y, and Z axes (length, height, and width). The three axes are essential in selecting a scanning target inside a three-dimensional human body. For extra power, systems use two amplifiers linked in series on each axis.



The computerized control console of the MRI system. The monitor on the right shows a scan of a spinal column.



The superconducting magnet at Elkhart General's MRI system. The patient slides into the bore of the magnet for the scan.

Gradient amplifiers in an MRI system send massive, precisely controlled currents through the large coils inside the bore of the superconductor magnet. The coils alter the magnetic fields inside the magnet. The shaped magnetic fields, called gradients, affect the resonant frequency of hydrogen atoms inside the field.

Resonance is the natural response of an atom when it gains extra energy of a particular frequency. From the resonant emissions of the atoms, sensitive detectors and analyzers plot the concentration of hydrogen atoms in a selected target area.

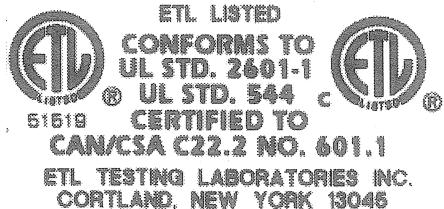
MRI images show the densities of hydrogen atoms. Water, which is one oxygen atom bonded with two hydrogen atoms, constitutes about 60 percent of

(continued p. 2)

ETL Listed

A milestone was reached when Susan Whitfield applied the first ETL label on a new 8645 system on May 10th. This little white label represents more than a year of research, design and mechanical engineering on the part of Techron engineers. In addition to a successful new product, they have more than 2000 drawings to show for it!

Certification is a must in today's global marketplace. Techron's customers throughout the United States and Canada can be assured that our new 8645 magnetic resonance imaging (MRI) system meets Underwriters Laboratories (UL) and Canadian Standards Association (CSA) requirements according to ETL Testing Laboratories in Cortland, New York.



Techron Top Supplier

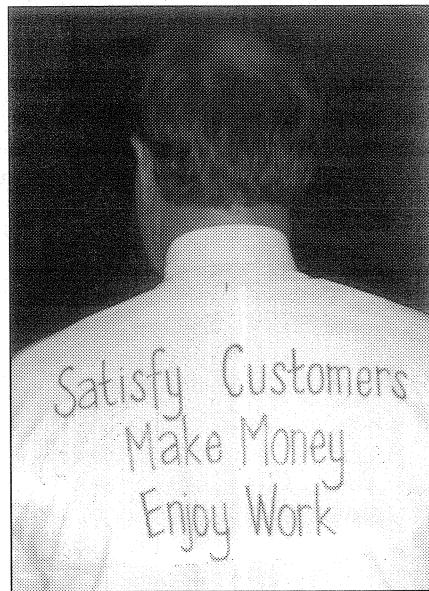
TRW Space & Electronics Group recently awarded Techron Industrial Products the highest rating for delivery and quality data for the 12-month period of April 1994 through March 1995 according to their "Supplier Performance Index." The rating represents the evaluated cost of doing business with a supplier over and above the material cost. Techron Industrial Products received a rating of 1.00 which is the highest rating they can give. The average rate for suppliers is 1.19, with 1.00 as the best.

TRW is a Fortune 500 conglomerate of companies. We have supplied their aerospace and auto industries with 7550 and 7560 amplifiers. ☐

Congratulations to Dave Menges!

According to a recent announcement in *The Elkhart Truth*, Dave Menges has distinguished himself as an adult training specialist for the Boy Scouts of America. He has been a Cubmaster, Publicity Chairman and an Assistant Scoutmaster in the Cherokee District of Elkhart County. The District, the LaSalle Council and the Boy Scouts of America presented Dave with the District Award of Merit, which is the highest award that can be bestowed by a local community. ☐

Comic Clarity!



The senior leaders got the message and a good laugh during a serious discussion May 9th, when Richard Pede got up from the conference table, took off his coat and turned around. He impressed everyone with his commitment, neatly printed on the back of his shirt: "Satisfy customers; make money; enjoy work!"

29 Years of Service Recognized

Millard Eger accepted a plaque from Terry Hammond during Assembly May 10. Patti Smith recognized Millard's 29 years of service to Crown's Maintenance Department. Co-workers especially appreciated the lawn care, the flowers he planted and the Michigan blueberries he supplied to co-workers every summer! Patti recalled that one summer's load of Michigan blueberries weighed 1,000 lbs. Thank you, Millard, and God bless! ☐

MRI, CONTINUED

human body weight. Parts of the body with higher water density (such as blood and fat) generate a stronger return signal than parts containing little water (such as bones or teeth). The signal strengths show up as intensities on a computer-processed display. In contrast to X-rays, MRI images show soft tissue clearly.

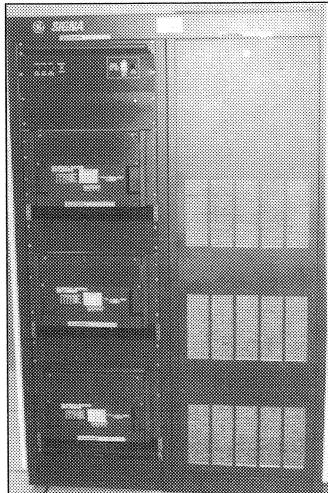
GE is the largest manufacturer of MRI systems in the world, but other companies are also in the marketplace. Techron works closely with GE and other MRI manufacturers to provide precise and controlled power required by this sophisticated imaging technology.

"Our amplifiers have been used in that market since the MRI development days in the late 1970s," said Howard King, Techron Sales Manager, Medical. Now, Techron is nearing production of the "next generation gradient driver subsystems." The 8645 and proposed 8700 series will offer even more power for faster imaging times, larger scanning areas, and higher image resolution.

In addition to MRI, Techron's products are used in power system simulation, electrical component testing, chemical analysis, space exploration, vibration test systems, recycling, radar installations, automotive research, particle acceleration studies, and noise reduction research.

"We don't always know the impact our amplifiers have or where they end up after we ship them," said Dawn (Meyer) Pease, a manufacturing supervisor for Techron, upon learning that Techron's amplifiers are in Elkhart General's new system. *"It's nice to know our products are put to such good use and that some come back home to Elkhart."* ☐

The gradient driver subsystem section of the MRI system. One cover has been removed to show three Techron amplifiers.



Milestones

Recognizing employees with over 20 years of service

Change seems to be the one constant we can count on here at Crown! Howard King, Techron Sales Manager, Medical, said the most exciting of all the changes during his 20 years here, has been the development of the magnetic resonance imaging (MRI) business.

Howard said, "Challenging, gratifying and sometimes disappointing, the MRI business has been disappointing only because we have been unable to supply all potential customers." It is gratifying to Howard that Techron has been such a good supplier. The few customers we could not supply are always willing to talk to Howard, and assure him that whenever we have product for them, they will consider doing business.

It is a personal vote of confidence for Howard, as well as Techron, to be recognized as one of the best suppliers in the industry. Howard was instrumental in developing the policy for separate marketing of industrial and professional audio amplifiers when Techron took on its

own name, colors, connectors, etc. The business was 90% original equipment manufacturing (OEM) when it began.

Challenge was not new to Howard who has worked as sales manager for a number of Fortune 500 companies such as Transiltron, TRW Commercial Component Division and Bendix Semi-Conductor Division. He served as National Sales Manager of the Magnetics Division of General Instruments.

Prior to his sales career, Howard did machine design for SPS in Jenkintown, Pennsylvania. He designed a machine which put annular grooves on the inside of rod housing tubes for nuclear reactors. His career in electronics was launched when IEI, a manufacturer of miniature electrolytic capacitors, acquired SPS. But it was the RV industry which brought him to Elkhart as a sales manager. Howard had first approached Clyde Moore representing his own electronics consulting business, Conelmark. When Crown needed a sales manager, Clyde called Howard.



Howard King

Howard and his wife Bernie will celebrate 43 years of marriage in October. They have five children and ten grandchildren. Howard is active in the Amateur Radio Missionary Service (ARMS), and is a Deacon and Treasurer of the Faith Baptist Church in Elkhart. ☽

Bruce Peterson named Director of Marketing for Audio

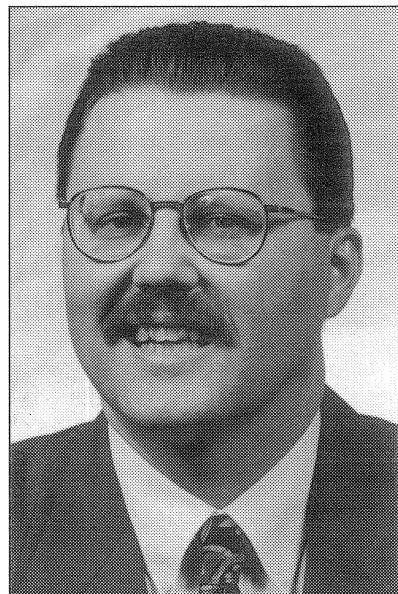
Gil Nichols, responsible for the management of Audio sales and marketing, has introduced Bruce Peterson as new Director of Marketing for Audio. Bruce was most recently Head of Marketing at Heath Zenith, a successful consumer division of Zenith Computer Group based in Benton Harbor, Michigan. Peterson helped create and directed Heath Zenith's marketing strategies for North America and Europe.

During his tenure at Heath Zenith, Bruce earned national and regional awards for his merchandising and marketing programs, while being honored corporately for his innovative marketing strategies.

Prior to joining Heath Zenith in 1987, Bruce held marketing and advertising management positions with three leading West Coast high technology corporations: the John Fluke Manufacturing Company, Tektronix, and Floating Point Systems.

Gil said, "Bruce Peterson brings 18 years of marketing excellence to our company. He joins a team dedicated to ensuring Guaranteed Excellence in our products, programs and services. We will work together to increase our market share and grow profitably worldwide."

Bruce lives in St. Joseph, Michigan with his wife Mari, 11-year-old son Brent, and 8-year-old daughter April. ☽



Bruce Peterson

The President's memo...

Why do We Need Divisions?

“Division” can be a negative sounding word, but in the business world it recognizes that a particular business has special focus inside a larger corporation. Crown International finds itself in three different and distinct markets:

- A. Audio
- B. Industrial/Medical (Techron)
- C. Broadcast

These markets consist of:

- A. Relatively unique sets of customers.
- B. Relatively different product lines.
- C. Somewhat unique needs.

I feel confident that most of us recognize that a vital objective of Crown International is to “Satisfy Customers.” By organizing ourselves into divisions we can more effectively focus on and serve each unique set of customers. We must focus less on each internal “functional department” and focus more on the external customer.

Internal functions, such as purchasing and manufacturing, are vital only if they are coordinated with other functions to bring satisfaction to the customers. We are assembling the various functions inside each division so they may all focus on the same objective—to service their unique set of customers.

“Functional efficiency” is a secondary objective and should always be subordinated to overall “business efficiency”. A football team may have several gifted players in various positions, but they only win games if they play as a team. A gifted quarterback or running back cannot rise above the overall performance of the team. It is our desire that each Crown Division functions as a team, and focuses on winning with customers.

As corporations such as Crown grow larger and more diverse in their products and markets, it becomes increasingly difficult for an entire corporation to function as a team. Divisionalization is a means of maintaining some of the benefits of a smaller company that can focus on its customers and on its own strengths and weaknesses.

We have added two new divisional leaders: Ron Taylor, General Manager of

Audio; and Norm MacIntyre, General Manager of Techron. Don Spragg will continue to lead the Broadcast Business Unit and Steve Peer will continue to lead Fabcom. These business groups are supported by Administrative Resources, Finance, Human Resources (HR), Market Research, Quality Assurance and Technological Research departments.

Each division and business unit will ultimately contain all the functions required to carry out its business mission. Corporate support resources will exist only where a particular function can more effectively serve the business from a corporate level than it could from a divisional level. For example, we will maintain HR as a corporate function to have consistent HR policies across the entire corporation.

We will be successful internally only as we bring ongoing satisfaction to our customers at a level that is visibly higher than our competition can accomplish.

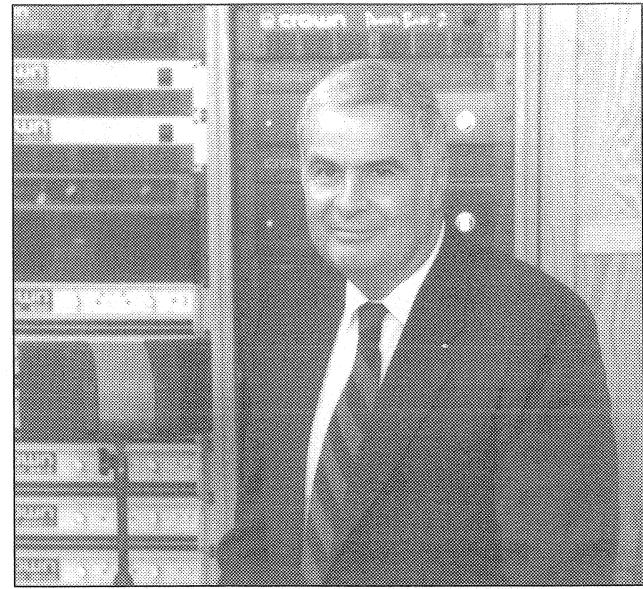
“Crown divisions” equate to “customer focus.” Customer focus should result in customer satisfaction. When that occurs, *everyone wins!*



Proverbs 27:23

Be sure you know the condition of your flocks, give careful attention to your herds; for riches do not endure forever and a crown is not secure for all generations.

Editor's Note: This verse closed the President's remarks at the Annual Shareholders Meeting, May 19th. His promise: “Your management will continue to work very hard to be good stewards of Crown's resources.”



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 May 23, 1995:

Balance in

Savings Account: \$5,167.83

Checking Account: \$ 642.66

Total On Hand \$5,810.49