

CROWN CRIER

Since 1971

Crown International, Inc. Employee Newsletter

June 1996

Who's In Charge Here?

by Libby Marshall

A favorite line from an old play is, "Here we are! But where are we?" Moving and rearranging 90% of Crown's business units sometimes seems like mass confusion. When a department or line is moved and keeps right on producing, it seems like a bit of a miracle.

Not so. The results are nothing short of good planning on the part of the Facilities Planning team, which meets every Friday morning, and the cooperation of every employee involved. Core members of the team and their major responsibilities are:

- Terry Hammond
The tie-breaker. Sets direction and priorities.
- Don Florea
Facilities management.
- Steve Myers
Plant layout and electrical design.
- Roy Pickler
Developed the original Gantt chart; schedules moves; resolves conflicts in Audio.
- Terry Frick
Demand flow manufacturing planning.
- Ron Taylor
Audio management.
- Norm MacIntyre
Techron management.
- Patti Smith
Administrative Resources mgmt.
- Steve Peer
Information Systems management.

Don said, "We had just finished Plant 3A, and were preparing to put a sidewalk between Plant 3 and 2A, when Terry Hammond gave the direction to build Plant 2B which would connect the two

buildings. We called in Mast Construction to prepare an estimate for the biggest building possible."

Don handled the paperwork which included requesting quotes and getting contracts signed and the timing of facilities projects with Roy Pickler's manufacturing schedule.

Dave Stuber and his Maintenance crew did all projects such as moving

One end of the line was assembling amps continually while the department was dismantled and moved around them. Production was up and running Monday morning in the new location just inside the south end of Plant 2B.

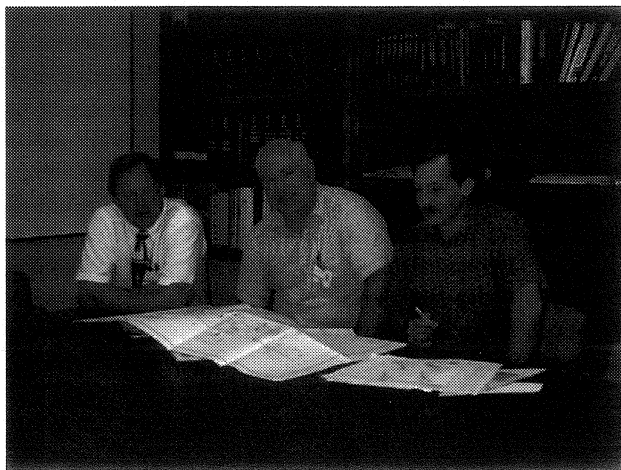
Most of the problems have been minor. However, the late delivery of the new wave solder machine pushed out the completion of the Modules move by two weeks. The current machine could not be shut down until the other was ready to go. This caused a domino effect, slowing down the move of Techron Service into the Modules area.

Don said, "The worst is over. Now we are ready to start pulling it all together. We are allowing for sales growth and expanding production capacity as we move."

Steve Myers said, "There are about 30 projects going on at the same time." For example, Steve designed and acquired new electrical service for the Techron heat run room being built along the east side of Plant 2A. That required 40 tons of additional air conditioning.

The Facilities Department is researching additional air compressor capacity which requires more piping and building construction. Plants 1 and 3 parking lots and landscaping must be added. There is constant juggling for office space for new employees.

Don said, "If it can be done, Dave Stuber and Steve Myers will figure out a way to do it. People are doing a fantastic job working together." ☺



Don Florea, Roy Pickler, Steve Myers

equipment, building walls, and minor construction projects. Steve Myers did all electrical design and works with the contractors on a daily basis. A sub-committee under the direction of Patti Smith selected tile, wallcovering and accessories for restrooms and eating areas.

Overall, the project has gone smoothly. The Stockroom was perhaps the most demanding move and was completed over a period of several weeks, with Friday night and Saturday overtime by all employees. Line 9 and Inspection moved Friday and Saturday, June 14th and 15th.

CAD PLANNING

by Libby Marshall

"When we lay out all the elements of the facility with the AutoCAD 13 software and design package, we know they will fit," said Steve Myers, Plant Electrician. The screen pictured here shows many layers which include every work bench, machine, light fixture, sprinkler head, vent and duct under the roof of the new Plant 2B. It is possible to space things so they look good and don't overlap, and determine the best placement for everything under the roof.

Like any other project, the building design process began with specific requirements from the business units to be housed in the building. Managers researched, envisioned future possibilities, met and compromised. They submitted their needs for space and possible future uses of the building, including details for electrical connections such as the location of each piece of equipment and its power needs.

Steve and Don Florea had to decide on the size and shape of the building, the type of roof and height of the eaves, windows, doors and parking lots. Heating and air conditioning were planned considering the equipment locations. The type of lighting depended on the type of work to be done in the building. Indirect lighting works well in Plant 2A, so it has been repeated in Plant 2B.

The design process takes intense thinking. Steve said, "During the Line 9 move and installation on Father's Day weekend, if I got any sleep, I frequently woke up with details going around in my head."

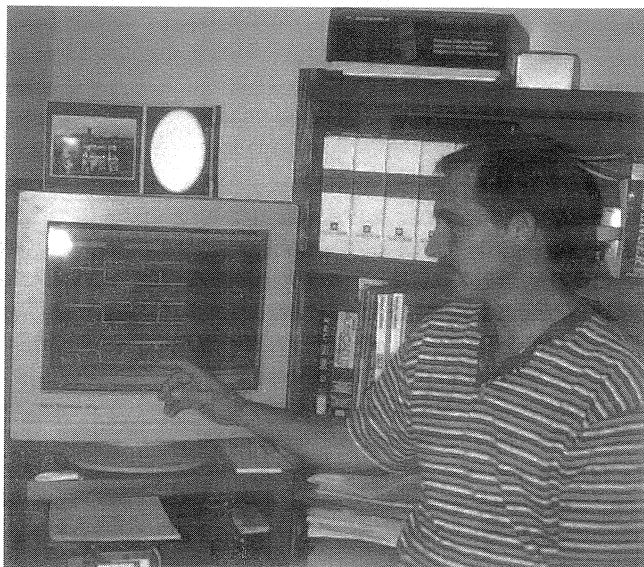
Steve says the most complicated part of the electrical design process is detailing the size and type of wiring and conduit needed for all uses. The bigger cables are laid in conduit under the concrete floor for the two to four hundred amp load centers. Lighter wires are hung overhead. Dick Housley installs all the phone drops according to Steve's drawings.

Steve works daily with contractors to interpret the design and make sure they use the right materials. He sets priorities, and schedules the workers accordingly. Then he supervises their work and answers constant questions.

Dave and Eric Stuber and the Maintenance crew do most of the electrical installations and connections. Much of this is done when the rest of us are sleeping.

Thanks to the computer, they rarely find that a work bench or machine doesn't fit in the space provided, as has happened in the past, when they used paper cutouts to lay out equipment. However, nothing takes the place of dedication when putting together a puzzle with enough pieces to overwhelm many of us.

Steve is a twenty-two year employee who started as a machinist. With the encouragement of Tom Szerencse, he com-



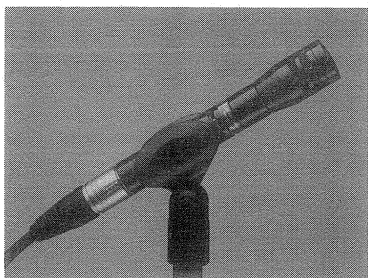
Steve Myers with a hand on a Pentium 90 with AutoCAD 13.

pleted a correspondence course on electronics through ICS. He passed the Elkhart City Electrical test and became a licensed electrician about 15 years ago. Steve has served on the Elkhart City Review Board for five years.

Steve has been involved in facilities planning for three years, learning to use the CAD software on his own.

Steve's wife, Nina, is the Techron Master Scheduler. Nina just finished a degree in interior design. They have done extensive home remodeling and have purchased land to build a new home. Nina and Steve have three sons. ☺

Ideal Mic - CM700



TCI (Theatre Crafts International) magazine named 1995 "sound products of the year" in their February 1996 issue. For Microphone Technology "Crown Audio's CM-700 compact cardioid condenser microphone is ideal for live sound reinforcement where an engineer needs the articulate response of a condenser in a rugged yet compact (5" x .93") mic design. With ultra-light diaphragm, humbucking transformer, polycarbonate capacitors and gold-plated XLR-3 pin connector, it offers three-position bass-tilt switch, two-stage foam pop filter, and 12-48V phantom powering." ☺

A Life Celebrated

Max Scholfield, president of Crown International from 1979 through 1987, died of cancer May 30th. His memorial service at Beulah Missionary Church on June 1st celebrated the life he shared with family, friends and business associates.

The reflections spoken at the service by those who loved and appreciated Max gave testimony to the legacy of Christian service he gave. Among those who spoke were: Terry Hammond, President/COO of Crown International; Enos Yoder, former Crown Engineering manager; and Max's son Lynn, former Crown Paint Line/Board Room Supervisor.

They told about Max's innovative electronic creations, the insights he shared with his fishing partners, the guidance he provided his longtime Sunday school

class, his beautiful bass voice and dedication to good sound and lighting for church services and his photographic skills.

He was always a hands-on man at Crown, and encouraged education for all employees. Max held bachelor's and master's degrees in electrical engineering from Purdue and Michigan State Universities, respectively. At Crown he worked on everything from machine shop projects and teaching computer skills, to leading senior management and serving on the Board of Directors.

Max and his wife Doris shared 44 years and had four children: Steve, on Crown's Manufacturing Engineering staff; Lynn; Ann; and Brent. They have eight grandchildren. ☺



Max Scholfield, 1930 - 1996

Production on the Move

by Libby Marshall

Roy Pickler, Audio Manufacturing Engineering Manager, revises his Gantt chart daily. The Facilities Planning Committee relies on the chart to prioritize and schedule all departmental moves.

A Gantt Chart organizes multiple projects into simultaneous and consecutive time periods to help prioritize and schedule projects. To date, there have been no line shut-downs during working hours to move equipment.

In fact, the MA series Line 9 completed 20 amps the first day after relocation. Roy said, "That was a tribute to manufacturing engineer Marlin Brown's careful planning. I am really pleased with the cooperation and hard work of everyone to get this done."

Line 9, Audio manufacturing's first "demand-pull" line, started up in January 1996 with no work-in-process inventory and half the usual number of assemblers. They build sub-assemblies only as needed, which was hard to get used to. Instead of completing a batch of units, they must wait until the kanban boxes of units are used before adding more inventory. "This line was paid for by the reduction of inventory — instant payback," Roy said.

Formerly, it took an average of two

days to build an amp. Now it takes less than four hours.

Line 2, which now builds the MT/PT family of amps, was next to move to Plant 2B and begin demand flow production on a new state-of-the-art line. Referred to as the "tube line," "erector set line" or "tinker toy line," it does involve innovative features. For example, an amp placed on a cart and elevated to work height at the beginning of the line can be assembled without lifting. Plastic protectors are eliminated without danger of scratching paint.

At the end of the line the cart is lowered on the elevator and automatically returns to the beginning of the line, underneath the bench. The non-value-added effort of moving piles of amps on pallets from one end of the line to the other is eliminated.

About half of the Line 2 production team volunteered to work overtime Saturday, June 23rd, to set-up the line. Rod Steffen and Doug Pettifor spent several hours on Sunday to adjust the automatic test equipment programming. By mid-morning Monday, Rod made one more adjustment to the test equipment so tester Anthony Roberts could run the test for the first amps.

The "moves" go on! ☺



Doug Pettifor, with drill in hand, and Barb Settles set up a work bench during the Line 9 move Friday, June 14th.



Line 2 Supervisor Brenda Mortimer (right) watches assemblers (left to right) Rhonda Walker, Na Vongvaniith and Esther Kent move the first amps into test position on the new demand flow line.

The President's Memo...

Plant Rearrangement...Why All the Trouble?

As we recently completed construction of our new 46,000 square foot plant addition, we could ask, "Why totally rearrange everything in the factory, rather than simply put all the new stuff in the new building?" This is a fair question and I will spend the next few paragraphs trying to answer it.

The basic answer to this question is that we want the facility laid out in a manner which will dramatically improve our overall material handling efficiency and lower our overall operating cost. A secondary but related reason is that these moves will place our entire Audio Division (our largest division) under one roof. We expect to not only improve material flow efficiency, but also improve communications between departments.

In the past most of our material flowed in the following pattern:

1. Outside purchased material was received into Plant 2, and placed in the adjacent Stockroom.

2. As the assembly lines needed materials, we pulled these items from stock and moved them north to the assembly lines in Plants 2 and 2A.

3. Prior to the installation of the powder coat line, chassis and other metal parts were fabricated in Plant 3, moved south on the outside to the Paint Line in Plant 2, and then moved again to the assembly lines in Plant 2 and 2A.

4. The assembly lines flowed north to prep/packing stations at the very north end of Plant 2A. Completed amplifiers

were placed on pallets and moved south, back to the Plant 2 Receiving Department where they were loaded in a truck and moved across the street to Shipping in Plant 4. They were unloaded and placed in Finished Goods stock in the Shipping Department.

5. As orders are received, amplifiers and other products are taken out of stock and shipped via truck, train and ship to customers.

In effect, we moved material back and forth several times and double-handled a high percentage of our finished amplifiers.

The New System

All purchased material is received at the Plant 3 docks where Fabcom is housed. In general, all material will flow from Fabcom or this receiving point at the north end of our facility, in a southward direction, with little or no back-tracking. The sequence of most purchased material from the point of receipt in Plant 3 will be:

1. Receiving Department - all parts entered into computer system.
2. Receiving quality
3. Stockroom and/or ...
4. Modules and Final assembly
5. Packaging
6. Finished Goods stockroom



Terry Hammond

7. Load on a truck and ship to the customer.

All of this movement, including in-house fabricated parts, will generally be from north to south, thus greatly decreasing the distance traveled and the number of times we handle each product. All of this handling adds no real value.

We obviously are undertaking a major relocation project. I assure you that the ultimate cost savings in material handling alone will pay for the cost of this one-time relocation, time and time again in the years ahead. Your continued patience and hard work are greatly appreciated as we rearrange our manufacturing plant for this improved efficiency in handling material.

That's why, "All the trouble!"

Terry Hammond

The plans of the diligent lead to profit as surely as haste leads to poverty.

- Proverbs 21:5

Employee Committee Financial Report

Balance as of 6/26/96:

Savings	\$1,238.55
Checking	<u>2,596.87</u>
Total	\$3,835.42

The CROWN CRIER is published monthly or bi-monthly to inform employees of customer, corporate, departmental and employee news and progress. News and ideas are always welcome.

Publisher: Richard Pedo

Editor: Libby Marshall

Staff: Bruce Bartlett

Jim Bontrager

Julie LaFolltette

Sharla Miller

Cilla Meachem

Roger Meachem

Reporters:

John Balzano

Rhonda Chapman

Sue Kurtz

Jan Smith

Cindy Swald

Lois Taggart

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Elkhart, Indiana 46517-4095