



For March/
April we focus
on:

Crown Int'l Night Life



by Libby Marshall

The weekends end and the weeks begin with the third shift at Crown International. Only four cars stand by the east door to Plant 2A on Sunday evenings. They belong to Wendy Gay, Todd

Gay, Jennifer Sibley and Kevin Wingett (L-R). From nine o'clock Sunday evening until five o'clock Monday morning they work in a relatively small area in a darkened, quiet plant. The outside world is locked out. The Paint Line conveyor snakes through the area, keeping the crew in touch with each other. Music from a radio accompanies their tasks.

Kevin Wingett flipped the switches to heat up the ovens on the night we visited them. He scanned a work list to see what was completed the Friday before and started to hang parts to be painted on the conveyor. Jennifer Sibley put on white paint coveralls and safety glasses and sprayed—smooth-coated—the parts as they came through the paint booth. The line can move from zero to six-and-a-half feet per minute. Usually they run parts at the rate of three to four feet per minute.

It was Wendy's night to splatter coat, a textured paint process, but until this was required she supported the others by hanging, masking or painting one side of the large chassis coming up. The workers rotate so they each do a different job each night.

Todd perched on a stool to take the painted and dried parts off the conveyor. He inspected each one carefully then initialed it with a marker. In this way defects can be traced and corrected. Todd carefully placed the parts in packing boxes for delivery to assembly lines. In one night, the



paint crew can run through up to 1000 small parts, such as the MR cabinet brackets Todd inspected and packed. The perforated wrap-around transformer enclosures and the chassis Jennifer painted took longer. They are expected to paint at least 380 parts a night.

They work out their projects together without a supervisor present. This is considered an advantage! Other advantages to this shift are great summer afternoons and Fridays off. On cold winter days it is good to sleep, which a couple of them did Sunday before coming to work. Usually they find weekend schedules are all mixed up. To have any social or family life usually means less than eight hours of sleep in 24. Todd said, "Somehow it seems like there are more hours in the day." [when you work 3rd shift]

The peace of the Third Shift Paint Line is rarely interrupted. Sometimes a CAD (computer-aided design) engineer or someone else on a special project will need admittance or try to leave without proper security procedures. Then that loud and hated security system message, "You have violated a protected area! The police have been called. Leave immediately," pierces the night atmosphere. Before one of the team was trained in security procedures, they had to listen to the message repeatedly until somebody came to correct the problem and turn it off. Now they usually can ease into the week with that easy-going third shift team spirit.

IN THIS ISSUE

- Paint Line 2 pg 2.
- Fab Family pg 2.
- QA & Modules pg 3.
- Night Techs pg 4.
- CAD & Janitorial pg 5.
- Geodyne pg 6.
- Don Peterson pg 7.
- Doing it Right pg 8.
- Milestones pg 9.
- Resistance pg 10.
- New Employees pg 11.
- Perfect Attendance pg 12.

Paint Line - Second Shift

by Libby Marshall

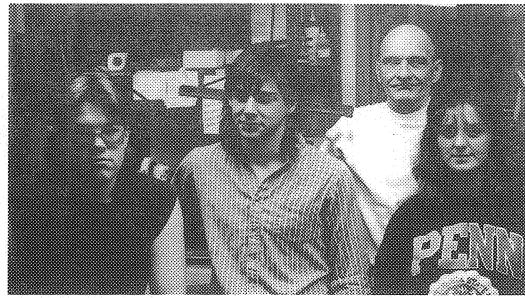
Dean Snyder is the "older" man on the team with five years' experience. Then comes Mike Pelí and Peggy Ellsworth. Dan Van Oss is not only the new man on the team, but also a new father as well. He is on Flex-Force and hangs parts on the conveyor as his first job.

Like the other Paint Lines and the Quality Assurance Department this group is cross-trained and they rotate jobs every night. They work as a team without direct supervision and take advantage of flex time which allows them to vary their start/stop times by 15 minutes. They hang, paint, inspect and pack just as the other two shifts do.

Other skills keep them occupied outside of

company hours. From nine until noon each day Mike repairs typewriters for B & D Business Machines, then joins the Paint Line at one o'clock until nine o'clock. He rests up on weekends by fishing at Potato Creek and elsewhere.

Peggy likes the shift times because she can be with her two children before school. She bowls and has fun in Dowagiac riding three wheelers with her family.



(L-R) *Dean Snyder, Dan Van Oss, Mike Pelí, Sr., Peggy Ellsworth.*



The Fab Family

by Libby Marshall

Dave McClellan operates the Amadas, which punch the flat sheets of steel and make the loudest noise. He also sets up all the machines in Fab for other operators. He doesn't mind working nights but does miss playing softball in the church league in the summer. His wife is a substitute teacher, so summer does offer more time for them to see each other.

This is a problem for all night people, but they do like the five percent pay premium and the three-day weekends. The Fab team works ten hours a day 3:00 PM until 1:00 am, Monday - Thursday. **Mel Smith's** sons joined Mel for supper recently, which helped ease the family-togetherness problem..

To the observer, one fun thing about operating some of the machines is that once they are set-up all you do is insert the material to be cut or formed, push a button and then watch the machine do the work. **Larry Potterbaum's** Wasino CNC mill cuts out aluminum handles, while a little stream of lubricant and water washes away the shavings and keeps the metal cool. It takes about 20 minutes each for the first and second cut for each handle. He can make about 20 per shift.

Scott Gring operates two brake press machines which form flat metal sheets into bottom and top covers for amplifier chassis and other smaller parts. He can form 200-300 MT covers per shift and 1500 to 2000 smaller parts. The amount depends on how many bends are needed and how complicated the parts are to form. Like most of the machines, these presses are numerically controlled, which requires some math skills to interpret how the dimensions on a blueprint will affect the finished part.

Darren Jervis operates an air press which inserts pins into parts such as back panels for chassis. He moves each part into position after he sets up the machine with the correct size anvil and pins.

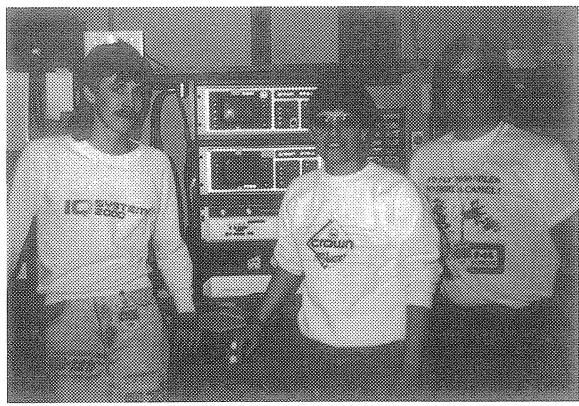
Steve Sisler is the expert on the spot welder, welding panels to chassis. He likes working nights. **Leonard Emerson** operates all machines but he usually does deburring and glass beading, which is a sand blasting operation, before a part is painted.

Leonard works nights so he can attend I.U.S.B., where he is a senior in Marketing, Management and Advertising. He expects to graduate in May, 1992, after taking a break next summer. He described one busy week. As youth leader at the Apostolic Way Church, he took a group to a conference on Saturday. As assistant minister he preached two sermons on Sunday. Fortunately a substitute taught his adult Sunday School class, and he ignored the music (he is a musician too) to work on the sermon right up to preaching time. He slept a little in the afternoon, then prepared a sermon for the evening service. Then he had to prepare for tests in two of his four classes Monday and Wednesday. Leonard seems to find more hours in his days than other people.



(L-R): *kneeling, Darren Jervis and Leonard Emerson; second row, Steve Sisler, Scott Gring, Dave McClellan, Mel Smith (Coordinator), Bob Price, and Larry Potterbaum (Nothing personal, Mel!).*





(L-R): Robby Fredrickson,
Sandy LeBiedz, Kevin
Gring

QA Night Team



by Libby Marshall

"A means to an end," describes the function of the Quality Assurance Department as a whole, as well as the three-person night team. They inspect parts from vendors, from in-house suppliers, Fab and Paint Line, and the finished units ready to be shipped to customers. All must meet the require-

ments of customers. Visual inspection notes dents, scratches, correct knobs, manuals, and warranty information. A Finished Product Control Sheet, better known as the "skid sheet," helps them test for the right power levels and output signals.

A dispatch list shows them what needs to be inspected and they find the parts to inspect on QA shelves, on skids by the audit bench, on the dock (large items) or at assembly line locations. They are cross-trained so the jobs they each attack first each night depend only on the weekly rotating schedule they set up.

They enjoy the freedom of coordinating their work without supervision. Generally they find night work easier because there are fewer distractions. While Robby and Kevin have worked nights from the beginning of their employment, Sandy transferred from days so she can pursue her own "means to an end." She attends I.U.S.B. part time, and in September will study nursing full time at Bethel College.



Front: Sylvia Canell, Jennifer Horton. 2nd row: Kim Zimmer, Kimm Gay. 3rd: Sharon Westlake, Issis Saad, Sandi Peterson. Back: Vicki White, Keith Emerson, Cheri Snead.



Modules

by Libby Marshall

You don't have to look over their shoulders long to appreciate the skill and dexterity of Sylvia Canell, Keith Emerson, Kimm Gay, Jennifer Horton, Sandra Peterson, Issis Saad, Cheri Snead, Sharon Westlake, Vicki White and Kim Zimmer. Tiny components, some with colored stripes around them like croquet balls, must be placed precisely on small circuit boards. Silver dots of solder hold parts in place, but have to look good, too. Rough points or over-sized dots won't do.

There must be a hundred or more solder points on each board which have to be inspected, snipped and/or removed and re-soldered. This occurs after the board is soldered automatically in the wave solder machine. The Lead o' Matic machine cuts off the tops of the solder points left by the solder machine.

Sandi, Cheri, Sharon, and Kimm attach or insert six to ten components and cables and check solder points on each board they assemble. Kim Zimmer removes bad solder points from boards with a suction tool.

A couple of them enjoy not having the pressure of the daytime assembly line. Others like the challenge of a line to work up to speed doing just a few parts at a time. Individually each person can do about 20 to 25 boards at night. Each board takes about 10 to 15 minutes, but this varies with the size and type of module.

Family and outside pursuits are both hindered and helped by night work. It is hard for the new mothers in this group, Vicki White, Kimm Gay and Issis Saad, but it does make it possible for fathers and relatives to help with babysitting. Jennifer Horton is taking three classes at Michiana College to become a legal assistant. Keith Emerson performs with Square One, a Christian rock band, which has some good prospects for the future. Sandi Peterson is a beautician during some of her off hours. Having Fridays off is a big advantage for this group.





From Nights to Days

Newlyweds Stacey and Mike Hammond met at Crown Int'l while working in Modules and QA on the second shift. They decided to change to the day shift when they had the opportunity. Stacey surprised Mike with lots of balloons to celebrate their first Valentine's Day as a married couple.



Baby Face

One member of a triple-header at Crown Int'l, so to speak! This baby is represented on the night shift.

The Night Techs

by Libby Marshall

The night techs do the "first test" after assembly of amplifiers is complete and before covers are installed on the chassis. At this point the units are considered "at tech." They work on all units. The night we interviewed them, they each had a different project.

Larry showed an MT1200. He was checking all electronic functions. If anything is wrong they diagnose and fix the problem or set it aside for Engineering work if necessary. With no problems, ten to fifteen units can be passed through per night. New designs take longer as the techs have to learn the new components and specs, but modifications of any kind can puzzle them if they are not informed before they see them.

Arnold is technician for the Techron Line 1 for part of the shift and then comes back to the tech bench for other work. He was working on an MA600. Arnold's beekeeping was featured in an ELKHART TRUTH article during 1990. He and his wife make honey and maple syrup and are working on a new farm purchased last year.

Eugene Andreyev enjoys the mobility of installing the top and bottom covers on tested units, packing them in plastic and styrofoam and putting them on the conveyor to be transported to the QA Department. He moves around and builds his biceps by lifting the 56 pound MA2400 and other units.

A ComTech 1600 was getting the attention of Bob Irvine, who has worked here for 15 years. He tests to make sure all units meet specs. He also tests the D-75s and PS400s on Production Line 4. Bob says quality has improved and the tech job is easier now because of that.

Ed Belonge is the newest man at the tech bench. He demonstrated the trouble he found when he measured the high and low bias of an MT1200. He added two missing capacitors and showed what the test reading was supposed to be. He is impressed that a majority of units are perfect. He appreciated the training and updates he received from Keith Schoolman who was night coordinator when Ed began working.

David Geiman is a production tech for Lines 2, 3, 4 and 7. He picks up what needs to be done when he comes in at night. He pointed out one detail which occasionally catches the techs off-guard. The DCA amps, for example, have to be serviced from a backward position, while the MT/MA/PB family of amps are serviced upside down and backwards. Keeping all those components in the right perspective is crucial to detecting and repairing problems. David doesn't mind working second shift but would prefer a ten hour day shift.

The techs are the one group which feels that a night supervisor or coordinator would be helpful in keeping them informed of modifications and getting answers to questions that come up as they work on the units.



Crown Int'l Babies

Jordan Michael Fletcher born to Vicki Fletcher of Line 1, Jan. 26, 1991.

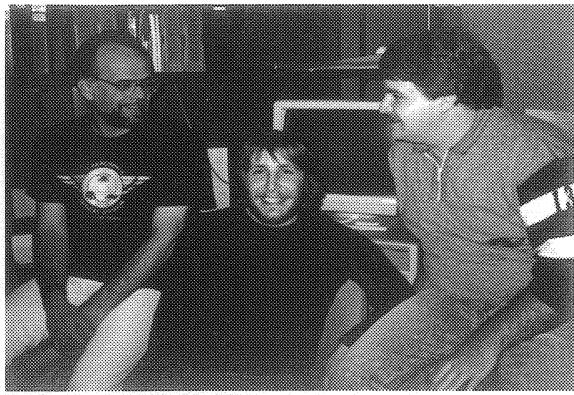
Tanner Christian Van Oss born to Julie and Dan Van Oss of Line 1 and Paint Line, Jan. 19, 1991.

Jack Robert Benjamin, son of Technical Service Rep. Jeff Benjamin, Jan. 6, 1991.

Aaron Scott Potosky, son of Mr. and Mrs. Scott Potosky of Crown Engineering, March 7, 1991.

Brittany Nicole Price born to Wendi and Bob Price (Fab) Feb. 11, 1991. Cindy Swald's granddaughter.

(L-R): Chuck Buerke, Kurt Manes, Joe Hayden



Computer-Aided Design



by Libby Marshall

Dim light, computer monitors lit up with multi-colored drawings, and quiet make the CAD Department seem like another world. Drafting boards are things of the past at Crown Int'l as all schematics are stored on the computer network. Occasionally old manual drawings are redrawn on the CAD system. The only difficulty comes when the calculations or dimensions don't quite add up. This can happen with manual drawing but the computer is exact.

Furniture, buildings, electronic schematics, sweaters are all designed by computers nowadays and high schools are teaching it. Most of the people in the Crown Int'l department started out with mechanical drawing and have taken courses and training to learn the skills needed.

Monte Tope is leaving to design furniture for a Ft. Wayne company, returning to his home town. Joe Hayden hails from Monticello and Kurt Manes and Chuck Buerke from Ft. Wayne. Rick Scielzo came to Crown from Arizona. Pete Lehman is the only local boy!

This group definitely prefers the night shift. They work on specific projects and avoid the hassles and irritations that occur during the day when more people are on board. The ten hour days go quickly when they are involved in the work and the long weekends are great!

Joe does the detailing on Pro-audio drawings. He learned CAD on the job with some courses at Purdue and a week's training in St. Louis.

Chuck designs Techron printed circuit boards and Kurt specializes in Mechanical and PC design for the TEF group. Pete is also a mechanical designer for Techron. Rick designs PC boards for Crown Division Sustaining Engineering and the Pro-Audio engineering group.



The Janitorial Group

by Libby Marshall

As Group Leader, Ron Ray coordinates the night time clean-up operations. As a former junior high school English teacher and avid reader, Ron edits copy for the CROWN CRIER. He is working on a computer program to keep supply purchase and other maintenance records. Ron is a jogger and bicyclist. He is President of the American Council of the Blind of Indiana.

Catherine Kyle cleans all of Plant 2A including HCJB and the Manufacturing Office complex. She uses daytime hours to study typing and computer use at the ADEC Education Building. Catherine has six children and nine grandchildren. Her youngest son, brother, two nephews and two first cousins were in Saudi Arabia in the war effort.

(L-R): Catherine Kyle, Tracy Taylor, Ron Ray, Kyle Robinson, Sandy Bonney, and Ray Perry.

Tracy Taylor cleans in Plants 4 and 1. She recently introduced her beautiful, three-year-old daughter, Tiara, to some of us.

Kyle Robinson cleans all other flooring for all plants. His hobby is restoring old Cadillacs. He has two. His main goal is to raise four children in a healthy environment. He has a 13 and a 12 year old and 11 year old twins.

Sandy Bonney is a five-and-a-half year veteran of Crown Int'l, spending most of that time on the Paint Line. She likes the quiet of night work. She is on-call for Avis Rent-a-Car to pick up and deliver cars and vans in Indiana, Chicago and sometimes Detroit. Sandy makes ornate keepsake photo albums for special gifts. Sandy has a son living at home and a daughter and grandchild, E.J. She cleans the office areas in Plant 1.

Ray Perry graduated from Memorial High School in June, 1990. He studied electronics all four years and plans to pass the technician test at Crown at the next opportunity.



Terry Baldwin is the lone maintenance person working the night shift. He accomplishes maintenance projects, such as setting up walls for the scanning electron microscopic (SEM) area. Terry also operates the security system.

The Geodyne™

Concept Metamorphosis

by Tom Szerencse

Things are seldom what they first seem to be. Take the case of the newly introduced Amcron GEODYNE power amplifier family. In early October of last year, Amcron's marketing PLM, Roger Meachem, ventured into engineering with a simple idea for a new amplifier. His marketplace was asking for a product defined as "a PB-1 with front-panel volume controls." After a short meeting with the engineering manager, Mike Rockwell, a project number was issued and core engineering team personnel were assigned.

As ideas began to gel on how to accomplish these front-panel volume controls, it became obvious that the front-panel esthetics and model name would need considerable [design] effort. Enter Ron Schemenauer of the Advent Design Agency of Elkhart. Ron was contracted to develop several renderings of the front of the product, several model names and a model. The team reviewed these smorgasbord-style and selected the look and the name Geodyne, which means "world power." Crown Technical Publisher David Harris refined the final design renderings. During a trip abroad, Roger revealed the product to key, influential and trustworthy Amcron importers. All were pleased and anxious to take delivery.

Shortly thereafter, the service department was informed about the new product, and they introduced requirements of their own. Customer Service Manager Dale Kauffman, insisted on improvements involving circuit breakers, driver transistors, output transistors, and the addition of "fault protection," which required a different main board. Then we thought we had all the requirements. Wrong.

Enter Manufacturing Engineering. Mathews Abraham is hot on this new "Theory of Constraints" (TOC) idea. He wanted many improvements in the way the products are assembled to increase "throughput" (a popular new manufacturing term). Mathews and his production team listed 24 ideas for ways to increase line production. Ernie Bird, already busy implementing the ideas on other Amcron products, shared his technical skills with our team. One requirement was "no topside soldering at the line level." Not a small task for engineering!

Another requirement involved CAD work for new output PCBs.

Ready to write the product definition, we had to address another requirement. Gerald Stanley indicated that significant performance and reliability improvements could be made with the addition of a few parts on the main board. This required CAD design, because rather than just changing modules, we needed a new main PCB

designed and tested.

Finally, we were at the point of starting development. Randy Schlemmer began the CAD design to change all the sheet metal, artwork, and general packaging concerns. This included design of new plastic parts and significant hard tooling. When he finished, the only parts not requiring change were the top and bottom covers, the rack end caps, and the side panels.

All these prints were detailed by Joe Hayden and checked for accuracy by John Flanagan. After the drawings were checked, Kenny Hunsberger quickly fabricated sheetmetal models for testing. Denny Pierce programmed the parts for fabrication on our NC punch and milling machinery and started the production release paperwork. PCB design on CAD involved the following Engineering Services personnel: Ken Walter, who designed the control board; Rick Scielzo, who designed the volume control/LED board; Larry Dennison, who made changes to the output board; Tim Micinski, who reworked the already intense main board and generated the product schematics; and Alan Wigent, who generated the required artwork and expedited samples.

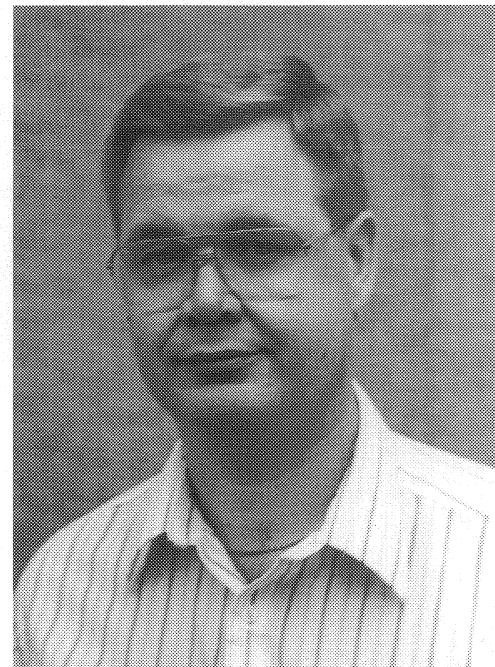
Then it was time to enter a new requirement, the winter NAMM show. Roger said, in his most diplomatic voice, "WE NEED SHOW MODELS!!!" Walter James scrounged up the parts and made models for the show. Note the word "models." Yet another requirement was added. Not only would there be a GEODYNE I, but there would be a GEODYNE II. Yes, the design effort expanded to include a second family member.

In Walter's spare time, he conducted electrical performance testing of the models to verify the products' integrity. This included output power, S/N, IM, THD, and torture testing, to name a few.

Bills of Material precede the production phase of all products. Enter Jan Smith whose experience and patience made this relatively painless. She produced ten BOMs to configure two product models for five country-specific markets.

For tooling and fixture design, Jim Moyer is our man. He ordered Amada tooling, designed steel rule dies, and designed special fixtures where needed. What a guy!

With BOMs in place, Becky Stuber and the Production Planners entered the forecast for the number of units to be built into the MRP system. This will first drive purchasing requirements and pilot batch work order releases for Modules, Fab,



Tom Szerencse

Family Day April 27, 1991

Spend an afternoon and evening with co-workers and family at the historic Elco theater in Elkhart. A full program is planned with games and activities for all ages.

Watch for more information from your supervisor and VOP point person.

The afternoon program starts at 1:00 PM and the evening program starts at 6:00 PM.

continued . .

and sub-assemblies.

Speaking of purchasing, special thanks goes to Jo Shreiner, Kim Biller, Greg Neff, Vicki Stringer, and Purchasing Manager Patti Smith for turning samples with a smile and for the tolerance shown when not all the right forms were filled out in the correct order. (Did I get out of that one OK?)

Before any work orders can be issued to various work centers, "routings," which list the steps for manufacture of a part, must be in place. Richard Putz implemented the routings, but only after we met his extensive list of documentation requirements. It was no problem but seemed like police tactics at the time!

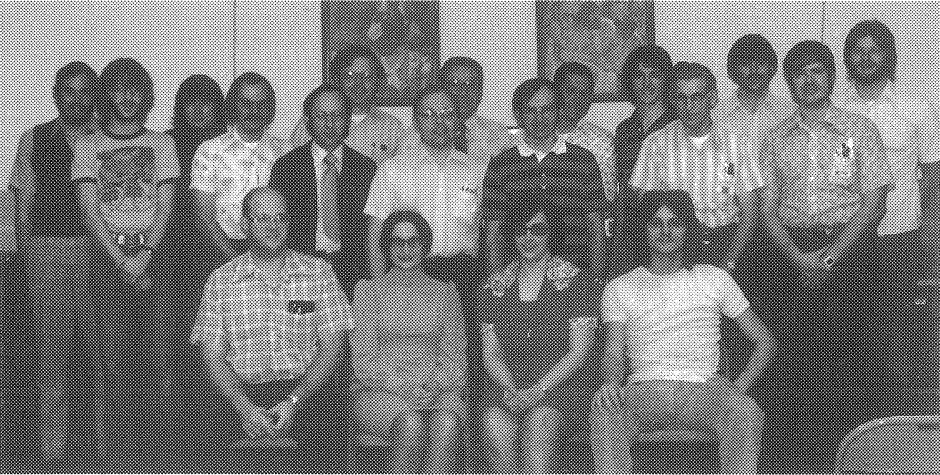
Another output to be satisfied was printing of owners and service manuals and "proof of performance" (POP) sheets. Sheryl Gingerich was responsible for supplying both owners manuals and POP sheets in time for produc-

tion. Dave Engstrom was in charge of the service manuals. All of these tasks involve design, editing, and expediting of technical literature. A sizable task!

Other departments involved in the Geodyne development were Rox Ann Rombke in document control, Ed Collins and crew in Fab, Lynn Scholfield and crew in the Board Room, silkscreen, and Paint Line areas, Don Florea and crew for QA, ATE and design help and Dan Cripe and crew for filling parts requests in the Stockroom.

The first pilot batch was produced in March. Everyone involved is to be commended for professional performance. After receiving general descriptions of the tasks at hand, everyone knew what was needed and carried through. They were only a phone call away and decision throughput was high. This was truly a team effort of synergy and pride.

In retrospect, let me say, "Look out for the guy who says, 'Can we just move the volume controls to the front?'"



Guess Who! Can you name all of these employees?

*Clue: Crown Int'l Engineering Department,
December 1976*

Don Peterson Recognized

Dale Kauffman, Customer Service Mgr., recognized Don Peterson for three major achievements. Don completed the University of Wisconsin Executive Development Program to receive Service Management Certification. He successfully completed units in Leadership skills, Finance and Budget, and Marketing and Customer Service. He also achieved certification for the National Association of Service Managers. This is Don's tenth anniversary with Crown Int'l. He is Field Service Manager and Technical Services Manager in Customer Service. Main title: Servant. Whatever it takes, is what he gives!



Word from the President

by Clyde Moore

Some of you see divisionalization as an implication that previous structures were not correct. This is not true. As the corporation grows, different organizational structures will be needed to serve the customer. If the personnel heading up Manufacturing and Engineering Services had not done their jobs well, then the corporation would not have been ready for the present changes. Various personnel will appear to be displaced by these changes; however, in the long term their careers will be significantly enhanced and their value to the corporation strengthened. Divisionalization is a result of a job well done.

By January 1st the direct divisionalization of manufacturing assembly areas was formalized with Mathews Abraham for Amcron, Bob Leininger for Crown, and Dick Moore for Techron. During the month of January and February we have been working to restructure all of the manufacturing and engineering overhead areas to assign them appropriately. This will greatly simplify the decision making process. While the actual transfer may not occur immediately because of cross-training required, the areas of Production Planning, Mfg. Engineering, and

divisional QA activities as well as the majority of divisional services have completed plans for divisionalization. On the short term some of these changes may result in poorer performance while personnel develop new skills, however in the long term, this will provide the highest quality responsiveness to a more defined set of customers.

During 1991, we will be establishing the criteria and characteristics to establish Fabcom as a division. This includes machine shop, paint line, circuit board, modules, wirecut and transformer manufacturing. These areas currently look to the other divisions like six in-house vendors with a single leader. The initial plan is to move machine shop, modules and wirecut into Plant 3, then during the next three years expand Plant 3 to add circuit boards and a new paint facility.

This is not a game of musical chairs but a carefully orchestrated restructuring to focus on our ability as a corporation to respond quickly to customer needs. We will probably see our largest sales increase in 1991 since 1987. Divisionalization is working. Changes of this magnitude will become more typical and restructuring more common as the organization continues to grow.



Engagement Announced



Bill Lawrence, Stockroom night shift, and Christine Massengale announced their engagement in THE ELKHART TRUTH February 10. They are planning a wedding for June 15 in Bethany Missionary Church. Bill fills orders and pulls modules kits nightly in the Stockroom. He is responsible for running AV equipment for assemblies, selling Canteen food and serving as Employee Committee representative and VOP alternate. Christine works nights at Hubbard Hill Estates Retirement Community. They are both looking forward to more time together.

Doing it Right!

QIP News and Updates

by Dave McLaughlin

Screws are great for holding things together. At least until the infuriating moment when the screw suddenly loses its grip while it is being tightened. This usually means the metal engaging the screw threads has broken, or "stripped." This is not fixed, short of welding or super glue.

At Crown Int'l, when the metal thread strips in an amplifier heatsink plate, this goes beyond annoyance because the entire heatsink takes the short trip to the scrap barrel. Historically, heatsinks for the MA, MT, MR, PB, and CT lines have shown this problem. Tightening a machine screw that fastened on a solder lug often stripped the metal.

Yvette Winther submitted an ECR listing the costs she saw as a result of this problem. The estimated PONC came to \$2,740 per year. When other amplifiers and lines were added, the cost of scrapped heatsinks and the labor needed to salvage transistors approached \$23,000 per year.

A short term fix to reduce the problem was put in place. Settings on the torque drivers used to turn screws were kept at the low end of the acceptable range. This produced some improvement.

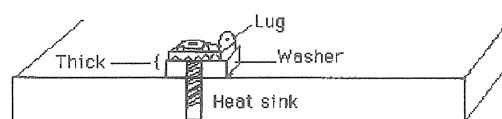
Root cause analysis showed that not enough threads on the screw were engaging the heatsink

metal, which was relatively soft aluminum or copper. If more threads could engage the metal, the bond provided by the screw would strengthen.

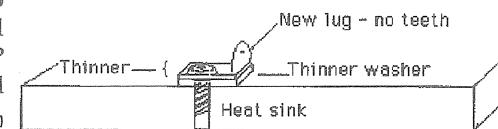
The key was to find a cost effective way to get more threads to engage the heatsink.

The diagram shows how the screw mounted on the heatsink, with a washer underneath the solder lug. Some ingenuity from Line Three Prepper/Packer Jack Frank led to the use of a thinner washer under the lug. Then Manufacturing Engineer Richard Putz added a lug without teeth, effectively making the lug thinner. The result: the screw could penetrate the heatsink further and engage more of its threads. Higher torque could be used again without stripping the sinks.

BEFORE



AFTER



Milestones - Dave Stuber

Recognizing Employees with over 20 years of service.

by Ron Ray

Dave Stuber first thought about working for Crown Int'l during a tour of the plant while he was in high school. That was way back in 1964. After graduating from high school and the International Telephone and Telegraph Technical School (I.T.T.) in Indianapolis, he hurried over to Crown Int'l to put in his application. The front office told him, "Don't call us; we'll call you." But he struck up a conversation with Glen Ryman in the parking lot. When Glen found out he was trained as a technician he hired Dave on the spot. That was in 1968. Except for two years in the Army, one of those as an Infantry Sergeant in Viet Nam, he's been working here ever since.

Dave started in 1968 as a tape recorder technician. Shortly after the Crown Int'l fire he became an amplifier technician and four years later joined the Engineering Department. In 1979 he became a one-man Maintenance Department. He now supervises a department of 17 people.

Dave said one of the most impressive high points of Crown Int'l history was how quickly the company was up and running again after the fire. He never missed one day of work. He carried things out of the building during the fire and the next day they began rebuilding tech benches and cleaning equipment.

He first plowed snow for Crown Int'l with a garden tractor just before the blizzard of 1978. Not discouraged, he is still plowing the parking lots. His equipment is now a lot bigger, but so are the parking lots.

You might call Dave a jack-of-all-trades. He has acquired many skills through the challenges of constant renovation and change in company facilities. While reminiscing with Dennis Badke about some of the things he's learned through the years, he wouldn't give consent to print any of it.

There was something said about making zilches. You had to see and hear zilches to appreciate them. We understand Steve Peer invented them.

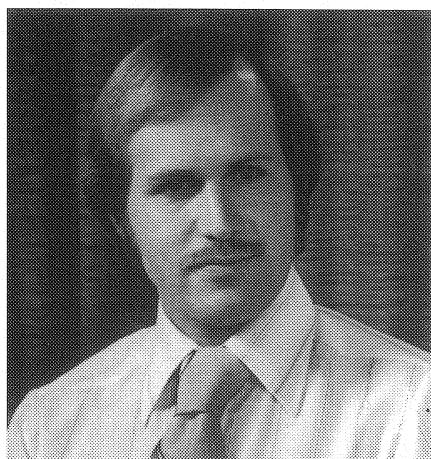


Dave Stuber

Dave met his wife here; Becky is a Master Scheduler for the MRP system. They live in Elkhart. He has a sixteen year old son, Jamie, and a thirteen year old daughter, Julie. His family and Crown friends have enjoyed his hobbies of 4-wheeling and boating with him. He is also a state certified Emergency Medical Technician.

With twenty-two and a half years of employment, Dave is just half way through his career at Crown Int'l. In just twenty-two and a half more years, he'll reach retirement age. That's when he figures he will finally have time to finish all those home improvement projects he's already started.

Dave always seems to be here when we need him. At some point in his career he has probably worked during every hour of a 24 hour day, Monday through Sunday, whether it's plowing snow or checking a security alarm in the wee hours of the morning or supervising a building project on a Saturday. He is known as a man to get the job done.



Before

Dave Engstrom Comes Of Age

Celebrated with plenty of black balloons, cute signs, goodies and certain nursing home appliances, Dave's 40th birthday was duly recognized. Fortunately he is not too old to travel. He travelled to Canton, Hong Kong, Singapore and Tokyo with Jerry Stutzman the first three weeks in March. He conducted service schools and was a consultant for sales presentations.

A Delightful Time

by Pam Fothergill

On March 9th over 100 Crown Int'l employees and their families enjoyed an early afternoon skating party at Holiday Skate Center. The first 50 people who entered were given free admission. Sandy Ramsey, Employee Committee head counter, gave each tenth person a bag of candy.

The committee presented three door prizes of \$10 gift certificates to the Scottsdale Mall and three gift certificates to McDonalds. We know four of the six lucky winners: Steve Donner, Kevin Kauffman, Brooke Stout and Sharon Haney.

The skating began at 4:30 PM and we skated until 7:00 PM. Everybody had a delightful time. We are looking forward to the next family get-together. Thank you, Employee Committee!



Employee Committee Financial Report

Balance as of Jan. 24, 1991	\$1547.31
<i>Receipts:</i>	
* Canteen	\$394.38
* Cookbooks/Miscellaneous	170.00
Total receipts	+564.38
	\$2111.69
<i>Expenditures:</i>	
* Ping Pong	50.00
* Baby Gifts	20.00
* Farewell Gifts	75.00
* Skate Party	112.46
* Westview Florist	250.00
Total expenditures	-507.46
Chiphone Balance 3/4/91	\$1604.23



Resistance at the Bending Machine

by Sherry Hochstetler

It was a normal day for a certain young lady in the Production Department until her supervisor asked her to bend resistors on the resistor bending machine. This was nothing new to her and she proceeded to insert the resistors into the machine. She stood up once and leaned over to check the machine when suddenly it grabbed her shirt and pulled her down.

She screamed for help and several ladies tried to pull her loose. After a few seconds of tugging on her shirt the ladies knew she was stuck. They needed help to release her from the captor. They called the supervisor.

He walked over and asked her what she wanted him to do. She stared at him. With red face he threw up his hands and went for some tools. There was much hullabaloo and teasing as he disassembled the machine but he did free the young lady. She was a bit wrinkled and embarrassed.

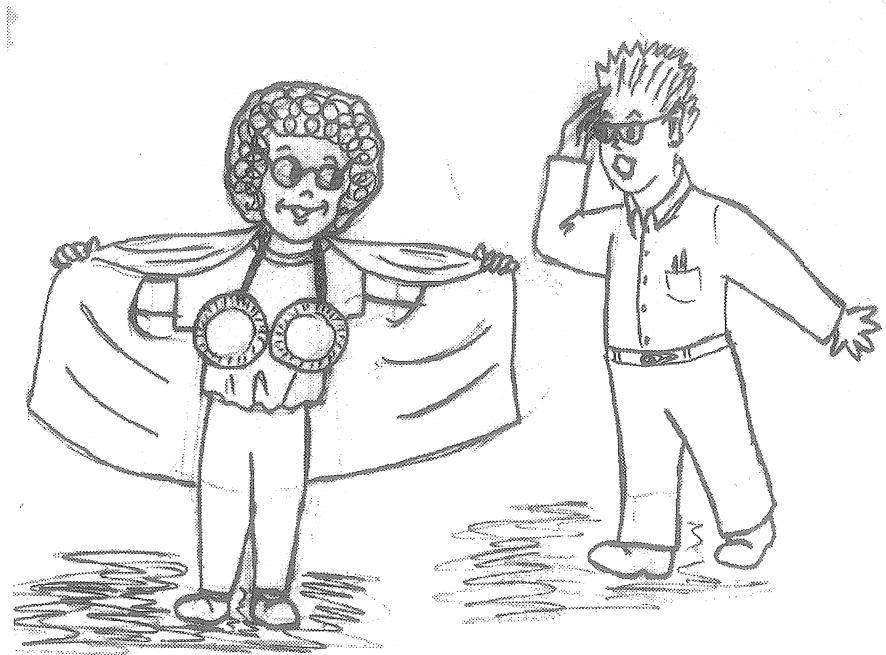
Since everybody made such a big deal out of it and teased her mercilessly the rest of the day, she thought of a plan to get even. She went shopping after work and then devised a protective device to wear when bending resistors.

The next morning when she unzipped her coat the coordinator and a few others had an attack of hysteria. It was worth a repeat performance. They do like to share with their supervisor! With some convincin, the certain young lady agreed to keep her coat zipped until the supervisor walked by.

When he stopped at her work station the young lady whipped open her coat. Reflecting the red of the supervisor's face were two shiny pie tins

harnessed to her upper body, rather like breast-plates of safety, so to speak. A fine example of resolution to a problem before VOP or ECR/CAR action was needed. Did anyone read the supervisor's accident report?

Let this be a warning to all, including users of the paper shredder in my mail room! (We may be able to arrange loans of the certain young lady's protective device.)



Illustrated by Vera Leinbach

New Employee Profiles



LORI BRABON (birthday, Aug. 8)

Amcron Production Team

Lori drives in from Edwardsburg. She had heard good things about Crown from friends. Her hobbies and interests include Bingo, reading, shopping, movies and watching football. She would like to move into a quality assurance position since she has experience in that area.



CHERYL GLANDERS (Feb. 8)

Amcron Production Team

A returning former employee, one of Cheryl's goals is to finish the renovation of their house. Husband Randy is an Engineering technician. Cheryl tutors for the Elkhart County Literary Network. She also likes to sketch and paint, collect antiques and read.



SHARON McCLELLAN (Mar. 1)

Amcron Production Team

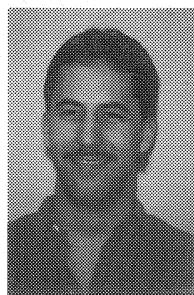
Mother of two Crown Int'l employees, Duane and David, Sharon loves to read and take care of her grandchildren. She likes to play volleyball, jog, bike and watch football.



JANE OVERHULSER (Jan. 19)

Amcron Production Team

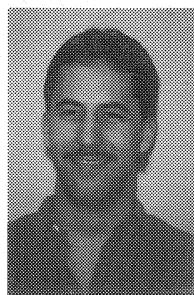
Jane enjoys horseback riding and other outdoor sports. Her goal is to go to college and become a CPA.



HGERIAN BARCLAY (Dec. 7)

Fab

Hgerian's ambition is to go into the psychology or nursing field. She likes to play tennis, do aerobics, share time with others and shop.



ROBERT PRICE (June 1)

Fab

Robert likes body-building and all sports, especially playing football and soccer. His goal is to be successful in every department he may work in.



THOMAS BROWN (Oct. 15)

Human Resources Development

Tom's hobbies and interests are travel, fishing, civil war history and football and baseball. His ambition is to be used by God in working with people to encourage workers in America and keep America strong and productive.



EILEEN QUIMBY (Mar. 30)

Modules

Eileen walks everyday for exercise and she also likes to crochet, read, play Bingo, and go to flea markets and arts and crafts shows. Her goal is to be a good worker and make lots of money.



LINDA JOYCE SCOTT (June 24)

Modules

Linda's hobbies and interests are flower arranging, crafts and working with children. Activities include running and swimming. She hopes to be a good worker and move up with Crown Int'l.

SHERRIE ZOU (Sept. 20)

Amcron Operations Coordinator

Sherrie Zou joined the Amcron Division as new Operations Coordinator on January 28. Two-year-old twin daughters, Rochelle and Sara, make Sherrie's interest in doing cross-stitch and crafts more interesting because they want to help.

Perfect Attendance

Compiled by Sue Ramsby

Perfect attendance means that no unexcused absences or leaves of absence were taken during the year. Forty-one production employees achieved perfect attendance records. They are pictured below.



One Year: (L to R) Front: Dolly Fulmer, Diana Turpin, Mary Smith, Brenda Price. 2nd row: Duane McClellan, George Hernandez, Laveta Randall, Shirley Haun, Richard Griffin. Back: Marie Kasa, Mike Hammond, Bill Swihart, Ed Collins, Jr., Brahma Nand. Not pictured: Brian Bussard, Thelma Freel, Kevin Gring, Tonya LeBlanc, Dave McClellan, Shirley Parker.



Two Years: Front: Carol McQueen, Shirley Carrick, Imogene Fields. 2nd row: Lisa Wynn, Gerald Roach, Greg Eby.



Three Years: Front: Patricia Smead, Irma Shank, June Kulp, Mabel Healey, Treva Kauffman, Jean Griffin. 2nd row: Larry Lanning, Paul Gerard, Jeanette Birr, Sharon Arnold. Back: Gene Gevaert, Don Pettifor, Ron Ray, Ike Kulp. Not pictured: Melvin Smith, Fab Night Shift Coordinator.

Cheryl Nicely gets VOP Treatment

It was one of those "winter blues" days in January when a beautiful arrangement of roses "made Cheryl's day." It takes a friend who understands to know when to do that. Mary Ann Irvin knows what friendship and VOP is all about.

Baby Face answer:
Kevin Gring

crown crier

The Crown Crier is the monthly newsletter for Crown International employees. Its purpose is to be informative, inspirational and entertaining.

Your involvement is highly prized. Please contact a CC Reporter with any material you would like to see in future issues.

Publisher: Beryl Moore
Editor: Libby Marshall
Staff: Dave McLaughlin

Bruce Bartlett
David Harris
Jenny Bartlett
Julie LaFollette
C. J. Hartigan
Dennis Badke
Ron Ray
Cilla Meachem

Reporters:
Kim Laffoon
Art Rowe
Pam Fothergill

Copyright © 1991 by
Crown International, Inc.

Promote Peace

The Jimtown High School Economics class decided to promote peace, not war, in showing support for USA fighting forces in the Middle East. Matthew Lutz, Dan's son, designed a flag-striped red, white, and blue "PEACEMAKER" logo with a soldier standing to the right. The logo is displayed on black t-shirts. With assistance from Junior Achievement the class set up its own company to market the shirts for \$10.00 each.