



MANUFACTURING FUN



When you see internationally famous bike racers on TV, the first thing you may have noticed is their helmets. The design is stylish and the graphics are colorful and attractive.

Looking more closely, you may have seen vents incorporated into the design. They channel airflow over the head and out the back. What you may not have thought about is who makes these helmets, how they're made and how important they are to a fun, safe biking experience.

In her own words, Carol Miller can tell you about all of that. She is the Human Resources Director at Bell Sports, Inc., the company that manufactures Bell bike helmets.

Tell me about your company and its services. Bell Sports makes thousands of biking helmets in many styles daily. All helmets made in the U.S.A are made in Rantoul, Illinois.

Can you describe the production process? The process for making bike helmets seems easy as you watch it. But it takes a

lot of special people to take plastic sheeting, Styrofoam™ forms, straps and pads to make a helmet that will pass all the safety requirements of our industry.

People who succeed are willing to accept responsibility and want to be good at the job.

Carol Miller



How do you sell your helmets? We sell directly to large stores such as Wal-Mart, Costco and Target and also to individual bike stores.

What are some of your manufacturing innovations? Our helmets have to pass strict quality control tests on both the raw materials and the finished product. We have to weigh each Styrofoam™ cap. Also, we freeze them, heat them and drop large weights on them to see if they hold to our standards. That's only part of our quality controls.

Is your company involved in something called lean manufacturing – getting necessary goods at the plant just in time for production and then shipping products out right away? Sure. Most successful companies today have to use this system. Keeping stock in a warehouse, waiting to make your product, costs money. So does

WHAT IS PRODUCTION?

This manufacturing pathway includes jobs for workers who assemble product parts, the housing for products or the products themselves. These workers often use tools and machines on the job. Specialized jobs may require education after high school in engineering or scientific fields.

holding finished goods without having a customer to ship them to. We have to do something called inventory turns. That's how many times in a year you move your stock out of the warehouse. The more turns, the cheaper your cost for warehousing will be.

How do you recruit your employees? We use employee referrals, newspaper ads and job fairs, and many of our people come to us from temporary agencies.

What does your company look for in employees? We need responsible people who want to grow and develop themselves in their jobs. Getting a good education is a great beginning to developing a career. Making helmets also requires good hand and eye coordination, concentration and following standards.

Once on the job, you have to make sure your attendance is good, learn your job, bring a good attitude to the job and try to grow in your position. We need positive, respectful and friendly employees. People who succeed are willing to accept responsibility and want to be good at the job.

What you do in school today, how you act, how much effort you put into school is actually training for your future. Work is a lot like school except somebody pays you for being there. That's the fun part.

WHY YOU NEED A BIKE HELMET

The Bell Bike Helmets Web site has lots of good information about why riders should wear a helmet. To find out more, see <http://www.bellbikehelmets.com/helmet101.asp>. When you get there, you'll also find out how to fit a helmet, how to clean and store a helmet, and when to replace a helmet.

FULLFILLING WISHES

Holiday gift-giving season is fast approaching. Sporting goods stores know that new and replacement bike helmets are on many "wish lists."

Your company just opened a plant in the area. Most area stores decided to place an order with you, hoping that a nearby vendor will mean faster turnaround.

Unlike many customers, Bikes & More didn't order via your Web site. Instead, you received a paper purchase order in the mail. And the purchasing person forgot to do all of the math. To expedite the order, you've decided to do it.

When you get the answer, then you'll verify the order by phone, ask for an amended purchase order and enter the data into the production computer system. The store's order will arrive in time for holiday sales. And bicyclists will get a wished-for gift.

Use algebra to solve this problem, and you'll make everyone happy.

Purchase order "givens":

Description	Number
Child helmets	3,000
Youth helmets	2,700
Adult helmets	Remainder

Total Order: 15,000

Write your algebraic equation to express this same information:

Then solve the problem:

Find the answer on page 11.



FOR MORE INFORMATION

Learn more about lean manufacturing on pages 28-29.



ON THE JOB

WITH JUANITA ZABEL

Juanita Zabel is Assistant Supervisor for the Bike Department at Bell Sports. She's part of a team that helps produce an in-demand product that's on every bike rider's wish list – Bell bike helmets.

Bike Department employees, in addition to Zabel, include a department manager, Line Lead A, five line leads, five material handlers and 130 assemblers. "We work together to make as many helmets per day with the highest percentage possible. We also make the best quality helmets possible," she says.

Monday through Friday, Zabel's



Bell is a place you are rewarded for doing a good job.

Juanita Zabel

days start at 5:30 a.m. "I begin my day by going through the daily production paperwork from the previous day," says Zabel, who schedules items to be run on the five bike helmet production lines. Then I make any corrections needed before the paperwork is sent to payroll. Next I work with an employment agency to place any new people on production lines where I need them."

What does she do the rest of the day?

- I schedule work orders on a production board that the Scheduling Department has given me.
- I place work orders into the Receiving Department to be staged.
- I make any labels needed to run work orders.

- I create any label programs needed in Labelview™.
- I check on any missing parts needed to run these orders.
- I handle all work compensation issues in the Bike Department.
- I work with supervisors from other departments if there are any issues.
- I sign off on payroll for all Bike Department employees every week.
- I track attendance, productivity and other company policies related to all Bike Department employees.
- I write up all warnings, evaluations and terminations related to all Bike Department employees.
- I help line leads with counseling employees.
- I help line leads figure out ways to improve production on their lines.
- I order indirect parts from my vendors.

"There are times when the number of helmets needed for the month increases dramatically. During these months, we work with a temporary service to bring in more people to help us meet our quota," Zabel explains. "Sometimes it is difficult for them to find the number of people we need or the quality of skills we need."

Computer software skills are definitely needed for a job like Zabel's. In addition to Labelview, she works with Microsoft® Excel, Word and Outlook, and she runs Avery and Zebra printers. Zabel also has a year of college accounting.

Good management skills are needed as well. "I feel a good Assistant Supervisor needs to have

outstanding attendance, be a motivator, be organized, enforce company policies without favoritism and be a team player," says Zabel.

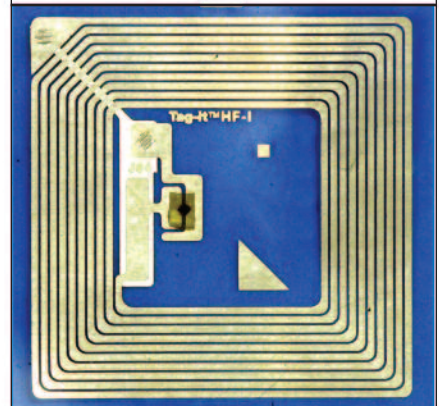
Your first job at a company doesn't have to be your only job, as Zabel's career demonstrates. "I have been at Bell Sports for 15 years. I started as an assembler. Within two years, I was a line lead. After several years, I worked my way up to a Line Lead A. Two years later I became the Assistant Supervisor.

"Bell is a place where you can work your way up the ladder to bigger and better jobs. I like that Bell is a place you are rewarded for doing a good job."

TRACKING ANYTHING?

LABELVIEW™ is software that's used to print RFID, bar code and other labels. RFID stands for Radio Frequency Identification. It's an electronic way to store and retrieve data. An RFID tag can be incorporated into a product or animal, for example, to identify it and find its source using radio waves. For more information, see

http://www.teklynx.com/products/labels/labelview_detail.html.



JUANITA ZABEL'S CAREER ADVICE

1. People are creatures of habit. Set your life on course early for what kind of worker you want to be in the future. If you are someone who misses a lot of school, then you will likely be someone who misses a lot of work. If you argue and get into lots of fights, then you will be likely to do this through adulthood.

2. Good employees are people who have good attendance, don't argue and fight with coworkers, do jobs asked of

them and work with little supervision. As you can tell, this is just like school. In school, you need to have good attendance, not fight, and do homework without being told over and over to do it.

3. You need to find a job you are interested in and put yourself into it. People will be able to tell that you like your job and you are good at it. This is how you get noticed and are given chances to advance in a company.

Wishes Fulfilled

(See problem on page 9.)

Algebraic equation:

$$x = 15,000 - (3,000 + 2,700)$$

Solution:

$$x = 15,000 - 5,700$$

$$x = 9,300$$

PRODUCTION FACTS

Education • Median Income

Assemblers, fabricators	HS pref., ST	\$ 11.42/hr.	Model makers, metal and plastic	OJT, CTE, cert.	21.28/hr.
Chemical plant and system operators (chemical technicians)	OJT, CTE, A	21.89/hr.	Molding and casting operators, metal and plastic	OJT, CTE, cert.	11.63/hr.
Computer control app., programmers and operators	OJT, HS, CTE, A	14.75/hr.	Plating and coating operators	OJT, CTE, cert.	12.96/hr.
Drilling and boring machine operators	OJT, CTE, cert.	13.69/hr.	Plastic molding and casting machine operators and tenders	Basic skills, solid HS math, OJT, blue print reading, manual dexterity	11.88/hr.
Industrial machinery mechanics and maintenance workers	OJT, app., CTE	18.78/hr.	Printing machine operators	app., CTE, A	14.38/hr.
Layout workers, metal and plastic	OJT, CTE, cert.	15.65/hr.	Production mgrs., industrial	exp., B, M	73,000
Lathe and turning machine operators	OJT, CTE, cert.	15.04/hr.	Tool and die makers	app., FT, CTE	20.55/hr.
Machinists	app., OJT, HS, CTE, A	16.33/hr.	ABBREVIATIONS. The following abbreviations are used in charts throughout this publication: A = two-year associate's degree; app. = apprenticeship, usually five years; B = four-year bachelor's degree; cert. = certificate; CTE = career technical education; educ. = education; exp. = experience; FT = formal training; hr. = hour; HS = high school diploma; lic. = license; M = master's degree; mgrs. = managers; OJT = on-the-job training; pref. = preferred; ST = special training.		
Materials engineers	B, lic.	67,110	SOURCES: Information from the following sources appears in charts throughout this publication: the 2006-07 Occupational Outlook Handbook, http://www.bls.gov/oco/home.htm , and the Occupational Information Network, http://online.onetcenter.org . Salaries are annual except where noted.		
Metal-refining furnace operators and tenders	OJT, CTE, cert.	15.74/hr.			
Milling and planing operators, metal and plastic	OJT, CTE, cert.	14.91/hr.			