
Technology Orientation

Part 1

WHAT IS A TECHNICIAN?

Technicians are people who work in technology-related industries, and who have the hands-on skills and technical understanding needed to perform often-demanding jobs. Experienced technicians typically have strong backgrounds in the theoretical or scientific principles behind their jobs, combined with excellent practical abilities.

Technicians work in fields like manufacturing, construction, engineering, electricity, electronics, telecommunications, computing, robotics, mechanics, medical testing, heating and air conditioning, and in every industry that uses advanced machinery and equipment (Figure 1). Technicians design, build, and set up equipment; design parts or all of buildings and work in the construction industry; operate machinery; design products; make repairs; participate in various phases of production and construction; complete research and development tasks; perform experiments; and collect data.

Many technicians work in manufacturing industries. They may create technical drawings of new products, build models of new equipment, or design the machines that will manufacture products. Technicians may also work in quality-control departments, performing tests on manufactured items.

Wherever they work, one of the most important functions performed by professional technicians is *problem solving*. Technicians have the knowledge and the practical skills needed to solve technical problems of all kinds. In any business and industry (but particularly in manufacturing and large-scale construction), lost time can cost a great deal of



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FIGURE 1—Technical careers demand attention to details and strong skills such as reading technical drawings.

money. Suppose a factory's production line stops working, and an important product isn't ready to ship to stores in time for the holiday shopping season. How much money will that manufacturer lose as a result? Or, what happens if a winter storm disrupts power supplies and communication lines in a major city. How will emergency services be coordinated? And imagine what could happen if a fire company's communication equipment stopped working for even a day. Professional technicians are needed to keep things running smoothly, from computer systems to communications to production lines (Figure 2).



FIGURE 2—*Electronics technicians work with communications equipment of all sorts from industrial instrumentation to emergency management and satellite tracking systems.*

The Attributes of a Successful Technician

Professional men and women starting out in today's technology-related industries will find that the skills required for job success are different from those of the past. At one time, a person who knew his or her trade could move up the ladder in a company, advance to a management position, or transfer from one company to another on the strength of this trade knowledge alone. Today, however, a technician who wishes to advance in the job market will also be expected to have good written communication skills, strong math skills, and experience using computers.

For example, in years past, a skilled electrical technician would have needed to know about electrical theory and how to apply that knowledge on the job. He or she might also have been responsible for overseeing other employees to make sure that proper techniques were used and quality was

maintained. While today's electrical technicians still need that understanding of electrical theory, they may also be expected to read and update technical drawings in a computer-assisted drawing program, calculate the amount of supplies needed for a project, and write well-worded e-mails that deliver instructions and technical information to colleagues (Figure 3).

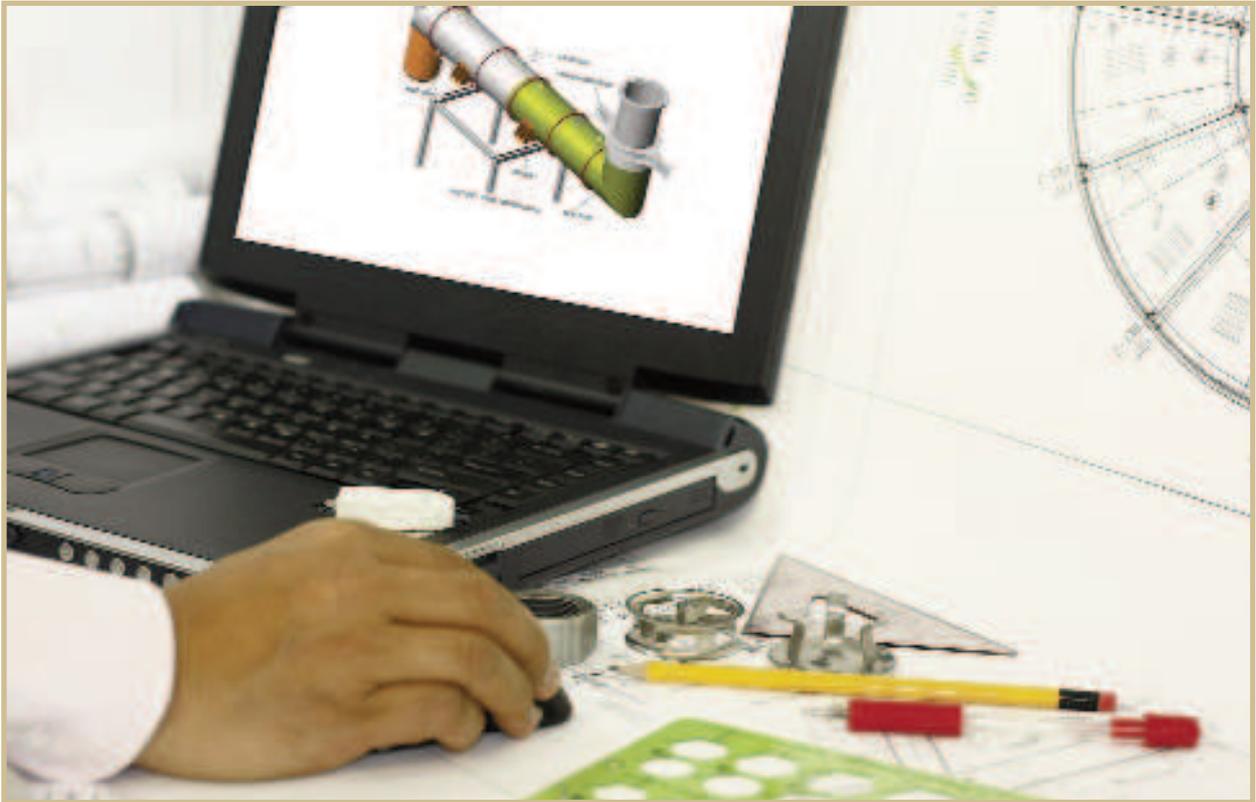


FIGURE 3—*Technical work often involves using specialized computer programs like this CADD (computer-aided drawing and design) program.*

Technicians know a lot about the specific day-to-day tasks they perform in the workplace. They're often the people who are called on to solve complex problems that other employees can't. However, in today's business environment, that alone isn't enough to succeed. Your technical skills will always be in demand, and they'll get you in the door, but if you want to advance to a higher-paying position or to management, you'll need to upgrade your professional skills as well.

What do we mean by *professional skills*, and why are they important? Well, if you think of your technical knowledge as the car, your professional skills are the gas—the energy that keeps the car moving. Any extra know-how that you can bring to the workplace will get you ahead in the race. Professional skills are those attributes that set you above the crowd, and show that you’re a committed worker who cares about excellence. Not only can you get the job done, but you’ll be able to show an employer that you can get it done faster, more efficiently, and more accurately than your competitors.

Another concern is simple economics. It’s important to be able to provide that “extra something” that a prospective employer is looking for. Suppose two technicians are applying for the same job. Both are equally qualified in terms of work experience, but one of them has excellent math skills, writes well, and can use the latest computer applications. Who do you think will be hired? And who will progress faster? Any extra skills that you can develop will enhance your employability and earning potential.

To compete in today’s workplace, a professional technician must be able to

- Apply mathematics to practical situations in the workplace, and perform accurate calculations
- Communicate clearly in writing
- Use such popular computer applications as word-processing programs, spreadsheets, database applications, and computer-aided drawing programs

If you’re working as a technician now, you already have many of the practical job skills that you need to succeed. You probably already have some great professional skills, too. Even so, there are a number of good reasons to enhance your professional skills and take them to the next level.

First, if you’re just starting out in the world of work, you may want to gain some additional credentials to add to your resume. Second, if you’ve been working in a technical field for a long time, your skills may need updating. Maybe your math skills are rusty, or you’ve never needed to learn how to

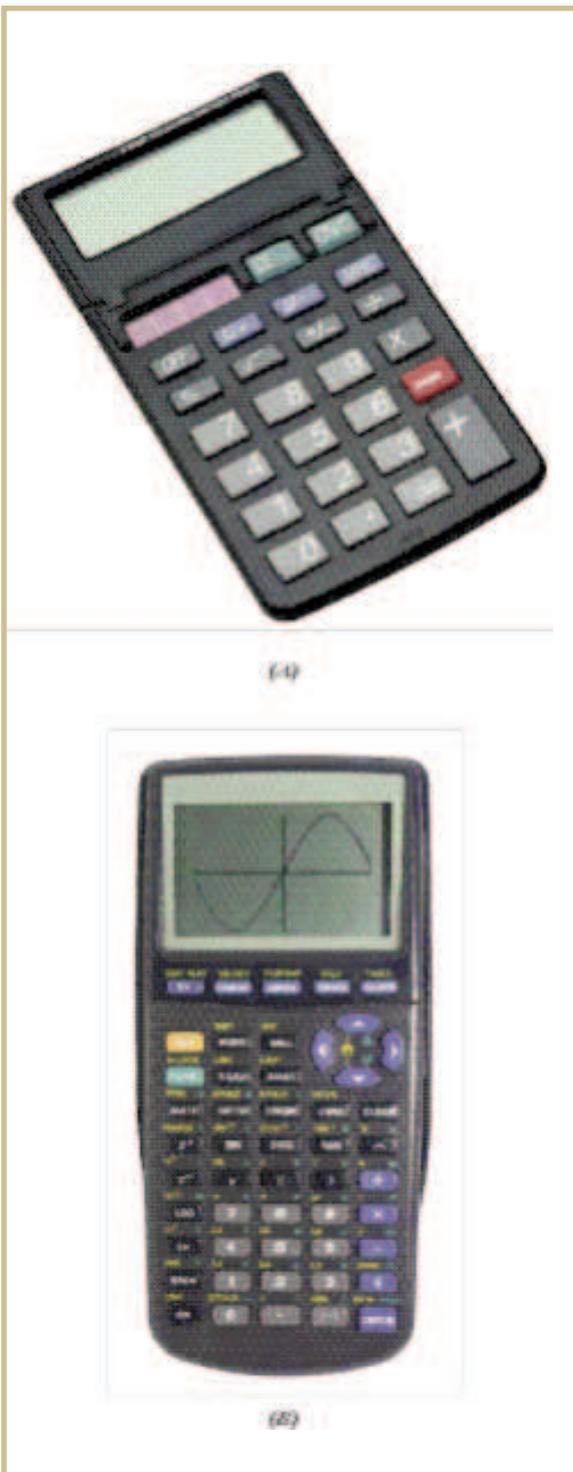


FIGURE 4—We all rely on math skills in our daily life. Those who work in technical fields most often rely on their math skills every day at work. Calculations needed are often basic enough to estimate or use a simple calculator (A), but sometimes require fairly complex work performed with a PC or programmable calculator (B).

use a certain computer program before. Improving your skills could help you get a better job assignment or improve your earnings. Third, if you're looking to advance to a management position, you may want to improve your written communication skills so that you can write effective reports and deliver clear instructions to other workers.

Now, let's take a closer look at the attributes of a successful professional technician.

Math Skills

When someone says "math skills," you can almost hear the groans. Many of us dislike or avoid doing math calculations. But mathematics isn't some abstract science of numbers that has no application to daily life; in fact, there's no area of your life where you *don't* need to use math. We perform calculations every day when we make a food budget, determine a car's gasoline consumption, measure distances and quantities, and manage time schedules. On a more complex level, every type of problem solving, reasoning, and analysis is based on math principles. This is especially true for professional technicians, who work with advanced machinery and in scientific environments (Figure 4).

Even some jobs you wouldn't expect require daily use of mathematics. For example, how can a pharmacist determine the right dosage of medication for a patient of a certain size and weight? How can an HVAC or electrical technician determine where the problem lies in a faulty circuit? How can an engineering technician figure out the amount of weight that a structure can

hold? Without good math skills, they can't do any of those jobs accurately, and bad calculations can cost money and even lives.

Here's a great example of the importance of math accuracy to professional technicians: the famous Mars Climate Orbiter mishap (Figure 5). The orbiter was a robotic space probe launched by the National Aeronautics and Space Administration (NASA) in 1998. The probe successfully made its journey all the way to Mars, but as it entered orbit around the planet, it disintegrated and was lost. The cause of the failure was determined to be human error. The software on the probe was designed to perform calculations in metric units, while the engineering team on the ground gave instructions to the probe using English measurements! The cost to the U.S. space program? 125 million dollars.

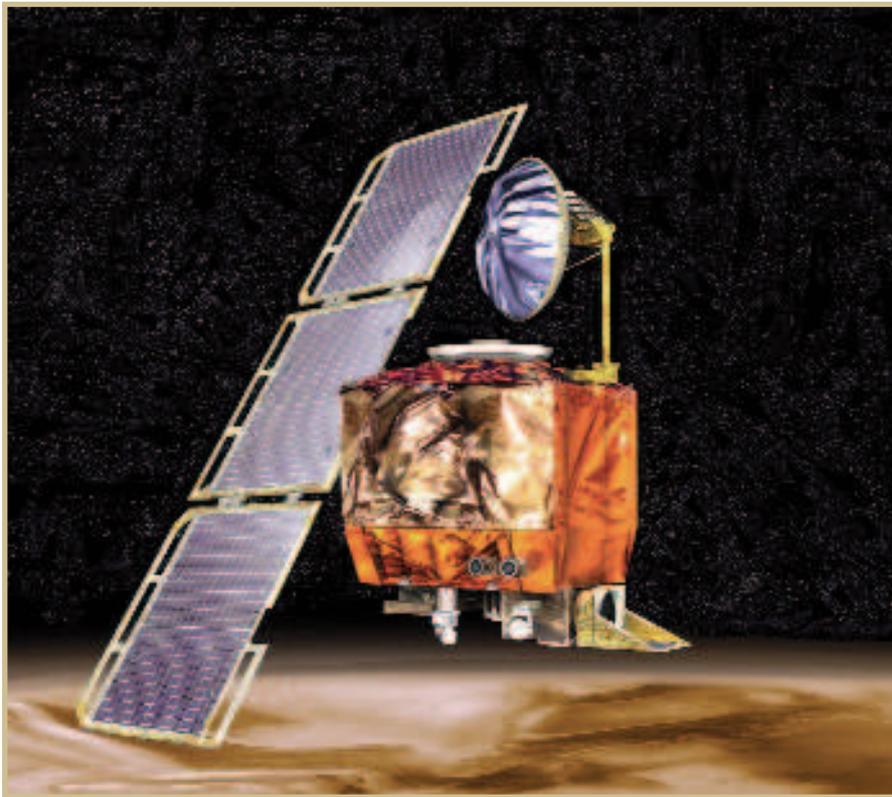


FIGURE 5—NASA's Mars climate orbiter failed due to a simple math error.

This error is popularly known as the “metric mix-up,” and NASA technicians hope they never make the same mistake again. But they looked very foolish to their NASA superiors, to the general public, and to the news media.

No matter what field technicians are working in, they need a background in basic science concepts and the mathematics that go with them. You may not be working with a \$125,000,000 space probe, but you may well have access to millions of dollars worth of equipment and products in a manufacturing facility. This is why your calculations must be accurate.

Now, many people will say, “Yes, accurate calculations are critical in my job, and that’s why we use calculators and computers to make them.” This is absolutely true. Computers and sophisticated calculators are some of the best tools a skilled technician can have. The only problem is, computers and calculators are just that—tools. They still require human operators, and humans can make mistakes, like in the NASA example.

There’s a popular saying about computers: “You only get out what you put in.” This means that you have to enter the correct mathematical data, formulas, and units to get the right answers at the end. Devices like computers and calculators can make our work easier and perform many tasks, but you still need to understand basic math fundamentals when you’re entering the data.

Engineering calculators and graphing calculators aren’t simple to use, at least without some practice and some basic background understanding. No matter how sophisticated and advanced a calculator is, you won’t be able to get accurate results with it unless you understand the math fundamentals behind its operations.

Writing Skills

When you're working in a technical field, particularly in a manufacturing environment where orders need to be filled and projects must be completed on time, it's critical to be able to communicate your knowledge to others, both co-workers and managers. A large part of that communication skill is being able to write clearly. Written reports, e-mails, and text messages are an important part of every job. You may need to give instructions, request materials and supplies, order tests, explain technical procedures, and assemble data into a format that others can read. The information you relay to others must be accurate and easy to understand. In short, you'll need to be able to communicate all aspects of your job effectively in writing.

When you're preparing any kind of a written communication, the aim is to produce a document that's clear, concise, grammatically correct, and spelled properly. The communications you send out reflect your professional image just as much as any other work-related tasks that you complete. Good communication skills help you to relay the right information to others, and they also give others a positive overall impression of your abilities.

Suppose you're on a job site when you receive an e-mail message from a coworker, describing a serious problem with some equipment. The e-mail correctly states the problem, but it's poorly worded and full of spelling and grammatical errors. What would be your impression of the person who sent it to you? Even if the sender is a highly skilled technician, the poor writing reflects negatively on his or her professionalism. Anyone who reads that e-mail may think that the sender doesn't really know the job, and may not take the message seriously. Over the course of your career, you'll find that good communication skills are very important to your success and advancement.

How to Write Effective E-mail

- Make sure the subject line is clear and concise, and reflects the content of the e-mail. A subject line that reads “Question about the new fax machine” is much clearer than “A quick question.” Even better: “The fax machine is jammed.” And never leave the subject line blank.
- Your message should be short and to the point. E-mail correspondence is meant to be an easy way to quickly exchange information. E-mails that are several pages long for no particular reason aren’t very effective, as the reader may not read the complete message. Always keep in mind the reasons why you’re writing this e-mail and your expectations from it. Are you looking for information, requesting action be taken, or simply providing information? If possible, include your main point in the first sentence.
- Be sure to clearly identify who is sending the message. You can’t always tell who wrote a message simply from the e-mail address. The best way to do this is to include a *signature block* with your contact information (full name, business address, and phone number, and any legal disclaimer required by your company).
- Clearly state whether a response to the message is expected.
- Don’t use *ALL CAPITALS* (which makes it seem like you’re shouting) or *all lower-case letters* (which can make it difficult to tell when sentences start and end).
- Avoid using casual abbreviations in a business e-mail (PLZ for “please,” ABT for “about,” or L8R for “later”). Also, don’t use *emoticons* (smiley faces and so on). In a personal communication, they’re merely annoying. In a business e-mail they’re unprofessional.
- *Proofread* your message—that is, check the spelling and grammar—before hitting “Send.” An e-mail full of mistakes will reflect badly on you.

When people read an e-mail you sent, they automatically form an impression of you. It’s no different from first impressions created during a face-to-face meeting. This is why presenting yourself well in writing goes a long way to enhancing your professional image.

Computer Skills

Another very important attribute of a successful professional technician is the ability to use computers with confidence (Figure 6). There’s virtually no business today that doesn’t use computers in every aspect of its operation. Computers run business offices, telecommunications systems, testing equipment, and the machinery on the production line. In the modern workplace, technicians who don’t thoroughly understand how to use computers risk looking unprofessional, no matter how much on-the-job knowledge they may have. You need to be able to do more than just send the occasional e-mail or print out a document.



FIGURE 6—Technical jobs of all sorts demand strong computer skills.

Improving your computer skills may feel daunting at first, but it doesn't have to be that hard. If you're working in a technical field, you already have a mind that's logical, practical, and used to solving problems. You probably already have some background in science and technology, and you're familiar with sophisticated tools. That's all the computer is—another tool that you can use to make your job easier. Finally, computer systems in offices and factories are designed to be user-friendly. Millions of people all over the world use computers every day in their jobs, so there's no reason why you can't, too.

To give you a better idea of the ways computers are used in technical fields, let's look at a few common examples.

In years past, a contractor would be able to construct an entire building using only a set of paper plans that were drawn by hand. Paper plans are still used today, and technicians must still be able to read them accurately. However, the difference is that most technical drawings are now developed on computer systems, using computer-aided drawing software programs. Permit approvals and component specifications are contained in these computer drawings, and any changes or additions to the design must be made using the

software program. The person who's working with these drawings must therefore be skilled in using a typical CAD system, such as AutoCAD. At one time, CAD drawings were merely an option that could make a job easier. However, many companies and jurisdictions have begun to require CAD drawings from contractors to issue permits and design approvals. This means that professionals in every technical field should have some skills in the use of computer-aided drawing.

In the previous section, we mentioned the importance of being able to communicate effectively in writing. Well, very few people are sending handwritten letters by mail anymore (which is one reason why the U.S. Postal Service is losing money). The vast majority of written communications today are created on a computer and sent by e-mail. Technicians will also need to use word-processing software to prepare specifications and proposals in an electronic form, and use spreadsheets to do budgeting and cost analysis. You'll use computers to perform all of these communications tasks on a regular basis, no matter what type of technician you are. Everyone from construction managers to electrical engineers to product testers communicates in this way.

Computers are also used to control all types of machinery. For example, *machinists* are technicians who use machine tools to make and modify components. In the past, machinists worked with hand tools and hand-operated equipment to make measurements and adjustments. Today, they use complex *computer-controlled (CNC) machines* to perform most production tasks (Figure 7). Machinists must be able to translate the actions they want to perform into computer commands that the machine can carry out. A modern machinist's job is therefore a combination of traditional machining and computer programming.

Another similar example can be seen in the job of the electrical/electronics technician. Years ago, electrical equipment was controlled by manual switches and magnetic switches called *relays*. Today, however, electronic computer controls do most of these tasks. One common example is the *programmable logic controller*. A PLC is a type of computer that's used to control machinery in factories. It was originally developed for

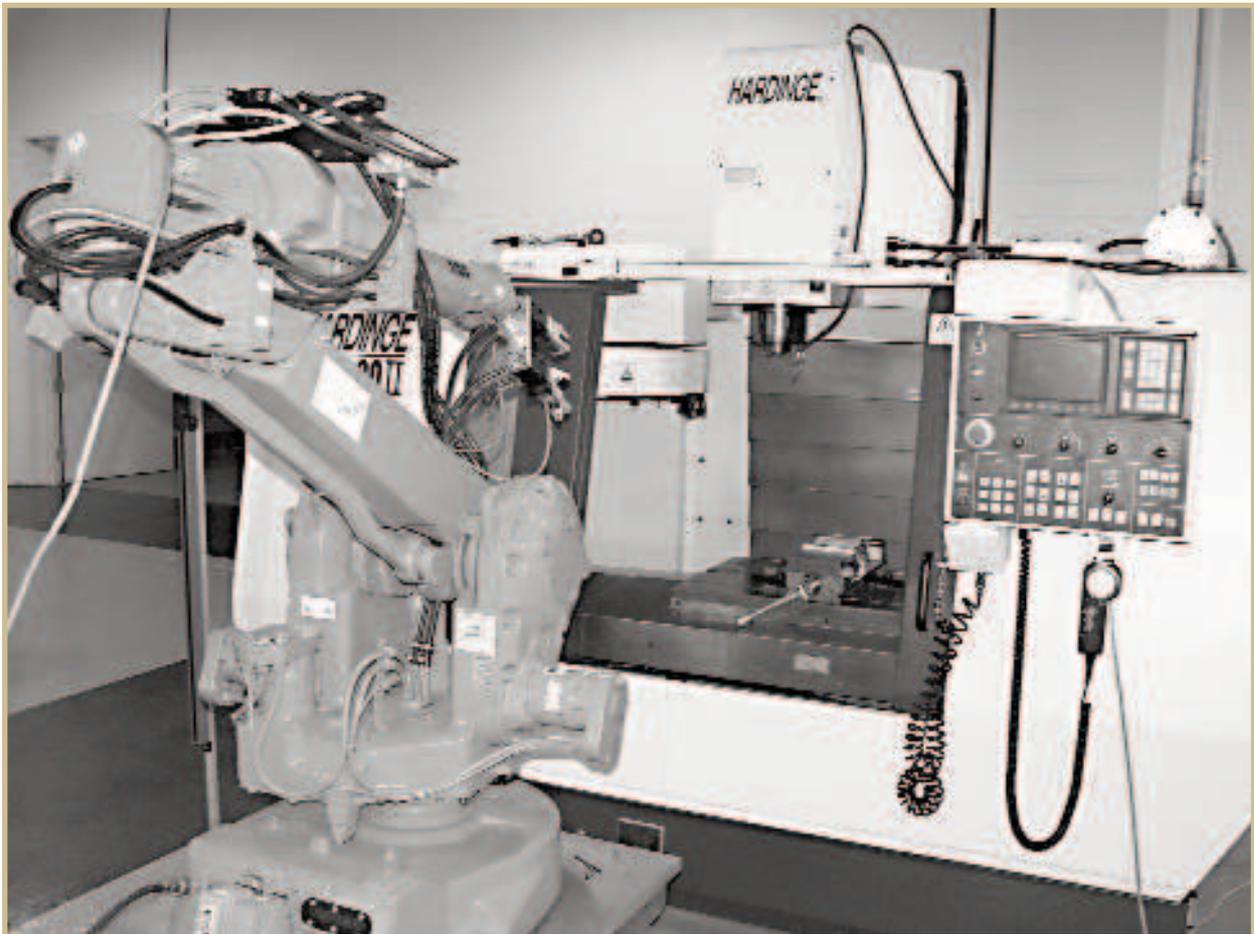


FIGURE 7—Programming CNC machining centers like this one requires in-depth knowledge of math, print reading, computer, and machining.

use in the automotive industry, but is now used in all types of product manufacturing. The PLC is programmed much like the computerized machine tools that we mentioned previously, but instead of directly controlling the machine, the PLC controls the flow of electricity, turning various functions on and off based on how the system is programmed. This is why electrical/electronics technicians need advanced computer skills in their jobs.

Good computer skills are useful to anyone who's employed in a technical job. A person who's thinking about changing jobs or moving to another technical field will find that computer skills can cross over from one job to another. For example, technicians in fields that may seem unrelated on the surface, such as construction managers, carpenters, firemen, and electrical engineers, will find that they have some important

skills in common. These individuals all need to work with automated building systems, electronic security systems, and fire prevention systems, many of which are computer-controlled in similar ways.

As a simple exercise, do a little research at your own workplace to see how widespread computers are in the company. How many personal computers are found in your company offices? Do computers control the telephone system and answer incoming calls? What types of computer-controlled equipment are used in the production area? Do computer systems control the ordering and shipping department? How much communication in your workplace is done through e-mail? Does your company have an Internet Web site? Are computer skills required in new job postings for the company? Today most companies couldn't operate at all without computers.

Education and Training

What are the qualities that separate an excellent technician from one who isn't so skilled? The answer is professional knowledge, training, and certification. The technical training that you complete, combined with some hands-on experience on the job, will get you started in a technical field. Depending on the field, it may also be helpful to obtain certification from a professional organization, and to enhance your training by attending conferences and educational seminars.

Many organizations that participate in trade shows and industry conferences offer certifications and training seminars to technicians. Whether required or not, having a certificate certainly helps to prove your skills to other workers, customers, and potential employers. It shows that you not only have the necessary skills to do the job, but also that you're making an effort to continue your education, stay up on current trends in the field, and master new skills.

For example, construction managers should be aware of the latest building codes that apply to projects in their industry. These can include new codes that apply to building structure, fire protection, electrical installations, and water drainage. These codes are updated often, so it's imperative that professional technicians in that field keep up with the latest changes.

Codes and Standards That Technicians Should Know

- The *National Electric Code (NEC)*, established by the National Fire Protection Association (NFPA), is the standard for the safe installation of electrical wiring and equipment in the United States. The NEC provides recommendations for the installation of both residential and commercial electrical systems. The NFPA publishes codes that cover sprinkler systems, fire alarms, and many other fire-prevention technologies.
- The *International Residential Code (IRC)* and the *International Building Code (IBC)*, developed by the International Code Council (ICC), are building codes that specify safe practices, both in building design and construction methods. A large portion of these codes relate to fire safety and prevention.
- The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) produces guidelines for the safe installation of heating and cooling systems.
- The *Uniform Plumbing Code* covers the installation of plumbing in buildings.

Obtaining Certifications

As we mentioned earlier, one excellent way to demonstrate your skills as a technician is to complete a *certification program*. Most certification programs include practical exams designed to test your skills in various areas of your chosen field. When you successfully pass a certification exam, you'll be awarded a *certificate* that indicates you've met the professional qualifications set by the organization.

In most cases, you won't need to pass a certification exam to be successfully employed. When you're just starting out in a technical field, you'll still be learning your trade, and you won't be expected to become certified right away. In fact, many certification organizations require that you have a certain amount of work experience before you can take their exams.

Employers tend to favor certified technicians, giving them the best job assignments and advancement opportunities. There are several reasons for this. First, a professional certificate clearly shows that you have knowledge and skills in that technical field. The certificate shows that no matter what your age, level of schooling, training, or experience, you have the hands-on, professional skills needed to do a good job. Second, certification allows an employer to compare the skills of different job applicants, so a certificate may give you a strong advantage over other candidates for a job. Third, customers and clients tend to be impressed by certified technicians.

Developing Personal Skills

Qualified technicians are all ages and come from all kinds of backgrounds. Anyone who's willing to learn the job can become a professional technician in some form. However, you can develop a personal advantage in the job market by being energetic, ambitious, and self-confident. If you want to be self-employed, you'll also need to develop a commitment to making it on your own. If you have ambition, communicate well, and are willing to work hard, we have no doubt you'll succeed in whatever career field you decide to pursue.

Good communication skills are vital to succeeding in the technology fields (Figure 8). You must be able to relay information to others, including fellow workers, managers, and customers who may not be knowledgeable about technical matters. This means that you must be able to explain complex technical concepts in a way that can be understood by an average person.

A common mistake that some technicians make is to use a lot of jargon and acronyms when they're speaking. These terms may be familiar only to those who directly work in that field, and thus cause confusion to others outside that industry. *Jargon* includes industry-specific terms that aren't commonly used in everyday conversation. *Acronyms* are abbreviations that use the first letter of each word in a name or title to form a new word. For example, DMV is a common acronym for the Department of Motor Vehicles. Many



FIGURE 8—Technical work involves the efforts of many. Good results come from good communication.

acronyms are used in technology fields, such as RAM (random access memory), CPU (computer processing unit), PLC (programmable logic controller), and NEC (National Electric Code). As a technician, you may know what a PLC is, but you shouldn't expect everyone you're communicating with to know what that acronym stands for, or what function the device serves. The best approach in business communications is to follow the popular acronym KISS, which stands for "Keep It Short and Simple."

Communication skills are important in any profession, but learning to communicate effectively with other people isn't always easy. Developing people skills is just as important as developing math and computer skills. High on the list of these skills are consideration, sincerity, courtesy, patience, and the ability to relate to other people's problems. Any previous experience you've had in dealing with the public will be a definite asset to your technical career. You'll use your communication skills every day when dealing with customers, managers, prospective employers, manufacturers' representatives, fellow employees, and technical support representatives. Good people skills are as much of an asset to your career as excellent technical skills.

Technical projects are usually completed in a team environment, with various responsibilities spread among the team members (Figure 9). You won't be able to complete an entire project on your own, and you'll rely on others to work with you to complete the task. To finish an entire project correctly and in a timely manner, being able to perform as a team player, working and communicating well with others, is a real asset.

FIGURE 9—Working well within teams will sometimes be a technician's most useful skill.



Professional Image and Conduct

When a person first meets you, he or she forms an opinion of you within just a few minutes. And once that opinion is formed, whether good or bad, it's hard to change. So it's very important that you always look and act like a professional (Figure 10). That way, you'll make an excellent impression that inspires confidence in prospective employers and customers.



FIGURE 10—No matter what the job, you're appearance and behavior reflect on your serious approach to your work.

The pursuit of excellence sets a fine technician apart from an average one. Paying attention to detail is one important way to provide excellent service. You'll inspire confidence and loyalty when people perceive you to be honest and skilled in the way you conduct your work. Let your excellent work and professional manner speak for themselves.

Remember, as a skilled professional, you should always make an effort to maintain a professional appearance. You don't have to look like a fashion model, but you should dress

neatly, practice good grooming, speak pleasantly, and keep your workspace neatly organized. Keeping your work areas and office tidy projects the image that you're efficient and organized in the way you perform your tasks.

A sloppy appearance detracts from your professional image and may even cause you to lose business. No matter how good your work is, your employer or clients may think that you neglect your job as much as your appearance, and it may be difficult to change this impression.

The Safety Attitude

In discussing the traits that are necessary for success in a technical job, respect for safe work practices is vital. You must be responsible for safety no matter where you're employed.

Whether you're doing a site survey to design a new manufacturing system, constructing a building, testing products, installing equipment, or even performing inspections on job sites, safety is a major concern in today's work environment. Even if you're not directly involved in hands-on tasks, you may still be responsible for the personal safety of the employees who are performing the work, or for the overall safety compliance of the job site. You must be aware of all safety regulations that apply to your job, and always be sure that you're following those regulations. Safety compliance is important to prevent injuries, and also to protect your company's business and financial interests. Many jobs have been shut down, contracts lost, and large fines levied because employees failed to follow basic safety rules.

Most of us are very aware of safety in our homes, because we want to protect our families from injury. However, workplace accidents can be much more dangerous than home accidents, because job sites contain so many more hazards. One workplace accident can injure dozens of people and cause tremendous financial and property losses to a company. For this reason, workers in any type of job should make every effort to use safe work practices at all times.

Safety is more than just the absence of an accident. Safety is an attitude that helps you prevent injury to yourself and others. Safe working practices should be a way of life, as natural as putting on a seat belt or looking both ways before you cross the street. Safety isn't a matter of good or bad luck. Instead, it's a matter of planning to work safely, recognizing potential hazards, and following proper work procedures.

The *Occupational Safety and Health Administration (OSHA)* is the federal agency that publishes safety standards for business and industry. Its regulations affect every business that has employees and sells its products or services. OSHA requires every employer to provide employees with workplaces that are free from all recognized hazards that can cause injury or death. Employers are motivated to adopt and use safe working procedures through the strict enforcement of the regulations. Safety violators can receive stiff penalties and fines.

Case Studies

Now that we've looked at some of the skills that can help you achieve success as a professional technician, let's examine a few workplace case studies that show how education and training can help people advance in their chosen career fields.

Case #1: Quality Control

Tom is a manufacturing technician who operates computer numerical control (CNC) manufacturing tools. After years of performing these tasks, he's become very skilled at the position, but wants a job with more responsibility and better pay. Tom has always been concerned about quality, and wants to move into a position in his company's quality-control department.

Even though Tom is a very skilled technician who can easily determine the quality of a product, he quickly learns that there's more to the job than just measuring parts and looking for defects. Quality control departments must keep very detailed records, calculate the number of parts that need to

be inspected during a period to ensure the quality level, and use computer systems to track trends and identify problem areas. In addition, the job requires him to make daily status reports to management, and communicate with the technicians who are developing the product. He's also required to track the progress of every step of the manufacturing process from raw material through final product.

In this new job, Tom will be drawing on his years of experience as an operator, but he must also add complex new computer skills to his daily routine. He needs to be able to analyze information on computer spreadsheets and record information in databases. He'll also be using written and spoken communication skills to develop status reports, identify trends, suggest improvements, and point out problems. Finally, Tom will be using mathematical and statistical techniques to analyze the product's quality level, and to determine how inspections are performed.

Because Tom needed to sharpen and update some of his abilities, he enrolled in an engineering program that will allow him to improve his skills and maximize his chances of success.

Case #2: Construction Manager

Alex is an experienced builder who recently completed an advanced training program, and was promoted to construction manager. When he starts working in his new position, he'll apply the new skills he learned. As a construction manager, he's now dealing directly with customers and financial backers on projects, which means that he must reflect a positive professional image at all times and instill confidence in them. He also needs to use his math skills extensively as he develops bids, manages budgets, and orders supplies for major construction jobs. He even needs to oversee the employee payroll and manage payments to subcontractors.

Alex also experiences new challenges in the hands-on aspects of the building projects, now that he's moved beyond the regular structural work he used to do every day. His new job requires him to oversee the installation of the important systems that are used in modern buildings. Fire prevention systems and security systems use all kinds of computer-controlled monitoring equipment. Heating, cooling, and lighting systems are also electronically controlled to maximize their efficiency and save energy. Alex is in a demanding new job, but he's applying all of the advanced skills he learned.



Self-Check 1

At the end of each section of *Technology Orientation, Part 1*, you'll be asked to pause and check your understanding of what you've just read by completing a "Self-Check" exercise. Answering these questions will help you review what you've studied so far. Please complete *Self-Check 1* now.

1. Today, most technical drawings are created and developed by using _____ software programs.
2. The best way to identify yourself when you're sending an e-mail message is to include a(n) _____ with your contact information.
3. Industry-specific terms that aren't commonly used in everyday conversation are called _____.
4. The _____ that's used as an abbreviation for the National Electric Code is NEC.
5. *True or False?* It's acceptable to use casual abbreviations and emoticons in business e-mail.
6. Always _____ your e-mail messages by checking the spelling and grammar before sending them.

Check your answers with those on page 71.
