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"Promoting Excellence and Quality in Piping Design"



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HOW TO BECOME A PIPER: PART 1 PIPING DESIGNER

By William G Beazley, PhD, SPED Executive Director

There are two distinct trajectories into piping: Designer and Engineer. The piping engineer specializes in applied physics and chemistry. The piping designer specializes in applied "ilities," i.e., fabricability, constructability, operability, maintainability, etc. This article deals with the piping designer.

THE PIPING DESIGNER BODY OF KNOWLEDGE

Piping Design, like other technician specialties, has a Body of Knowledge (BOK) based in company standards, field experience, engineering knowledge and applicable "ilities". Beyond drafting and CAD tools, this knowledge is acquired by reading customer standards and specs, field visits, correcting the work of others, mentoring by checkers and managers, vendor presentations and other means. The classical metric of piping knowledge is "years of experience."

There are probably countless books, blogs and articles on what defines the designer's BOK. www.pipingdesign.com has a list of books on piping design at <http://www.pipingdesign.com/books1.html>. James Pennock has written a good summary (<http://pipingdesigners.com/Training%20-%20Section%207D.htm>). The UK's Engineering Construction Industrial Training Board has developed a training program in cooperation with Richmond College (<http://www.ecitb.org.uk>). SPED's own Professional Piping Designer Certification program (<http://www.professionalpipingdesigner.com/>) has tried to train and certify to a consensus body of knowledge.

PREPARING

Recently, I identified six areas of prerequisite knowledge:

- 1.Algebra
- 2.Geometry
- 3.Physics
- 4.Chemistry
- 5.Descriptive Geometry
- 6.General CAD

I broke each area down into subtopics with applications to piping design. SPED's new [Piper Boot Camp online course](#) includes a self-assessment for each

I cannot emphasize these prerequisites enough. Many two-year piper CAD programs do not include a science and/or math course, a severe shortcoming. You don't need a PhD in these topics to thrive in the piping field, just high school level of knowledge and application skills.

LEARNING THE PIPING DESIGN BOK

I am convinced that a two or four year technical degree is now a standard requirement of getting into piping. That degree needs to cover the prerequisites above. There are several good programs that convey the essential elements of routing pipe. Just some of the institutions who have a piping design program:

Alfred State/SUNY
Alvin Community College
Central Texas College
Coastal Bend College
Houston Community College System
Lee Community College
Lone Star Community College
Maharashtra Academy of Engineering and Educational Research, Pune, India
Midland College
Richmond upon Thames College, UK
SAIT Polytechnic – School of Construction, Calgary, AB Canada
San Antonio College, Pasadena, TX
Sanjary Educational Academy, Hyderabad, India
Southeastern Louisiana University
Texas Southern University
Tyler Junior College
University of Zaragoza, Spain
Wharton County Junior College

OVERCOMING THE EXPERIENCE HURDLE

After formal training on basics, you face the "experience" hurdle. Most companies dread the prospect of providing a "finishing school" for newly trained designers. Classroom training adds to overhead and can rarely be charged to a job. As a result, most job requirements call for years of experience, usually on a particularly CAD application software program. So, what can you do?

Aim High/Start Low. Many low level entry positions open up that can tolerate low productivity in exchange for entry level pay. This is a way to add years to your resume.

Intern. Frequently, the academic programs will offer internships during summer months. They are a great ways for students and employers to try out each other.

Keep Training. The most popular CAD application vendors offer advanced training. Select them by looking in local and national job ads. While in the course, find out who is buying their system and follow up. Luck is when preparation meets opportunity.

GET PPD CERTIFIED

SPED [Professional Piping Designer \(PPD\) Certification](#) has become the "gold standard" of piping designer credentials. Most piping managers tell us that PPD certification is an excellent follow-on to formal schooling and helps assure a common core of skills in their employees. To date, over 800 pipers have become certified and the rate of certification continues to increase. You can find out more about PPD certification at www.professionalpipingdesigner.com or www.spedweb.com.

Courses, reviews and in some cases the PPD exams are now online. Pipers from across the world take and complete these programs



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on their own schedule, thanks to the internet. The introductions to each module are published in two playlists. And, SPED now has a weekly PPD Review topic:

Piper Boot Camp <http://www.youtube.com/playlist?list=PL00CC8CF06AEAA904>

Process Plant Layout <http://www.youtube.com/playlist?list=PL2263CF32384A9F4C>

PPD Review Topic of the Week <http://www.youtube.com/playlist?list=PL46A32B1584206EE4>

FINALLY, DEVELOP PROFESSIONALLY

"Don't underestimate the value of continuing education and professional development." I have heard time and time again that the pipers who move up fastest and stay longest are those who continue their education. The days of expecting the employer to pay for everything are gone. Stay hungry for more knowledge and experience. Volunteer to go to the field. Pay your way t that course. Get another degree. Attend professional meetings. Get certified.

The best way to continue to develop is to help others. Nothing clarifies one's understanding of a topic better than trying to explain it to others. Pipers need to train other pipers. Teach a class. Post a video. Give a talk. Write an article. The happiest people I know are the most eager to help others. A rising tide floats all boats.

The Society of Piping Engineers and Designers (SPED) is an international society established to promote excellence and quality in the practice of piping engineering and design. SPED emphasizes education and training to advance the employability and competitiveness of its members. !



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