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The Well-Rounded High Frequency Engineer

Gary Breed
Editorial Director



Many of the engineers I know are very good at something other than their particular on-the-job specialty. I know engineers who are concert-quality classical musicians on instruments as diverse as piano, harpsichord, bass viol and oboe. Others are accomplished rock, jazz and bluegrass musicians. I even met one who was an excellent flamenco guitarist.

Among my engineering acquaintances are fine-furniture-quality woodworkers, several professional-level photographers, a few painters and at least one sculptor. There are even a few engineers who are pretty good editors and writers.

In addition to the arts, engineers are accomplished in sports. Among those I know or have heard of are some pretty fair marathoners and triathletes, scratch golfers, near-pro level tennis players and more than a few trekkers and mountaineers (and I don't mean just a hike in the woods!). I met one young engineer who was good enough as a kick returner and wide receiver to make the team and spend a couple seasons in the NFL.

A lot of engineers apply their range of skills in ways that are more directly related to the industry. An obvious large group are the entrepreneurs who have built and run companies, as well as others who moved from design engineering into prominent positions in marketing, manufacturing and board-of-directors level corporate management. I know of two engineering professors who eventually became university presidents. One of them actually had several years of hands-on industry experience before returning to academia.

The final group I want to note are those who have multiple areas of outstanding technical expertise. For example, I know several circuit designers who were able to move successfully into the semiconductor industry. A few of them became experts at the device physics level, not just at the functional block level or in applications. Others have successfully shifted careers from military systems design to component manufacturing, as well as in the opposite direction from components to systems.

Of course, I love to point out the great things about engineers and the engineering profession, but there are other lessons to be learned from these examples. The first is to realize that times change, applications change, and as a result, the job market changes.

We heard a lot about the loss of jobs when the Cold War ended and the military market changed size and focus. I cannot forget that some of those laid off engineers never reached that level of income and job satisfaction again. Yet, many others moved to new careers—both within and outside the RF/microwave industry—and have had great success.

Another lesson is that a wide range of talent and interest is valuable when technology changes, with its resulting change in the job market and the required skill set for engineers. Engineers who are

willing and able to branch out from a comfortable niche will be the ones who succeed when times change.

The Only Certainty is That Things Will Change!

You've heard that old saying a thousand times—because it's true. Small changes, large changes and truly radical changes occur regularly. Just look at New Orleans after Hurricane Katrina for an example of the latter.

This issue's Technology Report covers recent large changes in the EDA tools we increasingly rely on to get our jobs done. In less than 25 years, that industry segment has progressed from sharing time on a central mainframe, to a few engineers trying to become more productive by using that new "personal computer" gadget, to successful business startups—and now, to an essential and large part of the

industry we work in. Could you do your job very well without computer tools? Neither could I.

Whether it's changing markets and applications, or the unchanging need to know the fundamentals, we try to anticipate what engineers need and how to deliver that information to them. That's why we provide both print and online access to our articles and informational columns.

We will soon be improving our online edition, partly as a practical matter, since a growing number of our readers prefer that delivery method, and partly because we want to keep up with changes in our industry. If printed magazines eventually become obsolete, we'd rather be among the leaders into the next mode of delivery than laid off and looking for work!