

SHOULD YOUR DAUGHTER

BE A CIVIL ENGINEER?*

This month's article was contributed by Judith L. Hamilton, a practicing engineer. Judy is an assistant project engineer for Woodward-Clyde & Associates, and is currently working on a project under construction in Nebraska. Prior to joining Woodward-Clyde, Judy was a structural and civil engineer for the Bureau of Reclamation in Denver and Sacramento, spending part of her time in the office and part in the field. She holds a B.S. in geology from Smith College and an M.S. in soil mechanics from the University of Illinois. Perhaps more important than her résumé is the fact that she enjoys her work and is good at it. What more can any engineer—man or woman—ask?

An engineering magazine may seem an unusual place to ask whether you worry about your daughter. Before you toss the question off as completely misplaced, however, you might examine your worries.

Do you worry about your daughter because she always seems to be out with the boys—building tree houses or jamming the gutter? Do you catch her following some fellow around deserted buildings? Does she talk to strange men—the ones who are digging up the street or putting in a new sidewalk? I'd advise you to stop worrying. You probably don't have a wild young girl on your hands, but only a future civil engineer.

If you feel the engineering profession is a male stronghold and picture women engineers as unfortunate mutations of the species, such a thought may cause you even more worry. But civil engineering isn't what it used to be, and women, whether you like it or not, aren't what they used to be either. Nowadays brains are generally considered more of an asset to an engineer than brute strength, and brains are reportedly divided equally between the sexes. Women no longer are content to keep house and keep quiet; they make laws, perform operations, and run businesses.

While women may find it more effective at certain times to be illlogical, the female mind really is capable of engineering reasoning. A test given high school students has indicated that for every three boys who have an aptitude for engineering there are two girls with same aptitude. Many of the "feminine" arts are actually related to technical work. Except for the size of the batch, there isn't too much difference between making cookies and making concrete; both require use of the right materials, careful measurement, and attention to the finishing process. Designing, sizing, and laying out a dress pattern has many similarities to planning a drawing. In fact, your daughter may have a better background for studying civil engineering than does her brother, who only tinkers with the car.

If you happen to realize that women can be engineers, and that your daughter may have the capabilities to become one, unless you encourage her, she will probably never even think of

entering the field. For engineering is still a man's job. Less than 1 percent of all engineers in the U.S. are women. Although the Society of Women Engineers is active in informing girls of opportunities in engineering, there simply are not enough women engineers around to talk to all the interested girls. And if your daughter does express an interest in engineering, she's likely to face some discouragement from her associates. Many high school students and even teachers think a girl who plans to enter a technical field must be a "little odd" and can put considerable social pressure on her to drop the idea. With a father who is an engineer, however, your daughter is lucky—she can always explain she's doing it at your insistence.

If your daughter is a little hesitant about a career in engineering for fear of what it might do to her social life, you can assure her she is not likely to be an old maid. Four-fifths of the women engineers in the U.S. are married, and most of them have families. Today, combining a career and a family is much easier than it was in the past. Families are smaller and less home-oriented. With prepackaged food, dishwashers, garbage disposals, electric heat, and air conditioning, housekeeping is not much of a problem. Women today simply do not need to stay in the home as they used to. Yet a woman engineer who wants to stay home for a few years while her children are young doesn't have to give up her career. By spending a few hours a week taking courses in her field or attending professional and technical meetings, she can keep up to date enough to obtain a good job when she does return to work.

But what about the job itself, especially the reactions of the man a woman engineer works with? While there is still some prejudice against women engineers, most of it seems based on a reluctance to try something new. Once engineers have become used to the idea of having a woman among them, they rather enjoy the experience. And as one inspector said, since he is used to taking orders from a woman at home, he might just as well do the same at work. While contractors may consider a woman on the job is a safety hazard, the danger is largely imaginary. No construction worker has yet fallen off a wall because of me (although they might for your daughter). There will be some jobs your daughter won't get just because she is a woman, but as a consolation they at least provide amusement. After all, what male engineer would ever be told he probably wouldn't fit into the firm, but to visit the company anyway so they could see what he looks like.

Engineering should be an ideal profession for women. If your daughter has the interest and aptitude, give her all the encouragement you can. For what more could you wish for her than that she have a life which is useful, challenging, satisfying and enjoyable—and will keep her in the company of such a fascinating group of men?

*This article is addressed to men, since I am quite certain other women engineers are more capable than I of telling their daughters about engineering.

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