

Hello,

My name is Elwood Downey. I realize this is a bit unusual. I am looking for an opportunity to get back into the discipline of RF and Antenna engineering. I saw your posting for an Antenna Designer and would like to introduce myself. As I will explain, just reading my resume you may decide I am not qualified, but I ask that you give me a moment of your time.

As a BSEE student at Purdue University I was fascinated with antennas. I took every E&M class they offered including the graduate level courses and appropriate math courses as well. I graduated 7th in my class with high distinction after three years.

After graduation I worked two years for a small company in Richardson TX working on many RF projects including an omnidirectional HF spiral, a UHF printed circuit balun, an offset-fed parabolic dish, an L-Band radome, and a 10 GHz feed horn with fan beam and circular polarization. I was equally comfortable both on the range and performing mathematical analysis and computer modeling.

In brief, I am comfortable with the following RF topics:

* Transmission lines:

characteristic impedance, SWR, reflection coefficient, loss, Smith chart, balanced, unbalanced, common-mode currents

* Antenna Concepts:

input impedance, far-field pattern, gain over isotropic or dipole, ground-plane image

* Antenna examples:

dipole, monopole, yagi, small and lambda-sized loops, parabolic reflector, horn

* Related math:

linear algebra, vector calculus, differential equations, Maxwell's equations (both forms)

* Modeling methods:

method of moments, finite difference time domain

* Additional Reading:

classics by Krauss, Silver, Jasik; IEEE A&P.

* Propagation:

D, E, F and F2 layers, A and K geomagnetic Index, 10 cm and X-Ray solar flux

After that small company lost a major contract bid, I left and further developed my software skills as a scientific programmer. I eventually combined that with my EE background to become a world-class expert in telescope control systems, which took me to many of the major observatories around the world. I have reached a point where there are few remaining challenges in that line of work and it is time for new growth opportunities by returning to my first love of antennas. Of course, I understand that I will be starting at the bottom again.

I almost hesitate to also mention I am a licensed amateur radio operator, Extra Class, WB0OEW. I am well aware that much misinformation about antennas and related topics abounds in amateur circles so I do not claim this as a significant credential by itself. However, it has given me many practical opportunities to study and build working antennas and maintain my interest even as my profession was in a different field. For example, I have designed, built and analyzed high impedance feeds for end fed dipoles, low impedance feeds for electrically small loops, 144 MHz circularly polarized antennas for Earth-Moon-Earth, and Pi and T matching networks.

I believe I can make significant contributions to your next antenna or RF project. I hope you will contact me by any of the following means to discuss further. Note I already reside in Tucson so no relocation will be necessary. Of course, I can provide the usual resume and references when the time comes. I appreciate your time.

Sincerely,

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