

# THE ROLE OF EMC TECHNICIANS



**Background information on certifying EMC technicians under the NARTE program is presented.**

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Successful EMC (Electromagnetic Compatibility) compliance programs or projects are highly dependent upon the availability of appropriately organized teams of engineering and technical personnel. The credibility and responsiveness of these teams are only as good as the specific EMC skills of the various EMC engineer and EMC technician personnel included on the team, and the basis on which these people are selected, qualified and organized. The role of the EMC engineer usually has prominent visibility on these teams. However, the importance of identifying, qualifying and utilizing individual technician EMC skills, which must extend beyond equipment-specific training, has emerged as one of the primary personnel-related requirements and objectives of the EMC community. This article identifies similarities and differences between EMC engineers and technicians, focusing on the increasing importance of the technician in all areas of EMC.

A better definition and understanding of the skills required of an EMC technician is essential to the emergence of a technical career path which can exist separately from, but not subordinate to, that of the EMC engineer. The importance of selecting EMC technicians that can "think" EMC, as well as fix things, will help balance this teamwork relationship. But first a concerted effort is needed to organize peer relationships within the technician community, matching specific EMC skill re-

quirements to a step-phased career growth based on experience, training and certification. Otherwise, "EMC Technician" will remain a broadbased term that includes everyone from the young bondstrap/filter parts inventory specialist to the lab manager. Procurement specialists will be better able to compare the skill levels of various contract bids when the criteria for qualifying EMC technicians is better defined and understood. Background information on certifying EMC technicians under the NARTE (National Association of Radio and Telecommunication Engineers) program is discussed below.

## WHAT IS AN EMC TECHNICIAN?

EMC technicians provide support in areas ranging from EMC design to final evaluation and testing for EMC compliance in commercial, industrial, medical, and military environments. In most organizations, a project or task is usually assigned to an engineer/technician team. The team ratio varies, but commonly is comprised of one engineer with as many as four to six technicians, although depending on the complexity of the task, the technicians could report to a senior technician. Not only do technicians get involved in hands-on support; they also provide a resource of technical knowledge and guidance for their peers and lead engineers.

What are the main differences between EMC engineers and tech-

nicians? Education is the most visible difference. Most engineers have at least a four-year engineering degree from an accredited engineering school, followed up with project oriented EMC experience. The typical EMC technician holds an Associate Degree in electronics, and/or has received extensive hands-on training in military or civilian electronics and has had some degree of radio-frequency (RF) experience in his or her background. Three distinct skill differences, beyond specific educational credentials, are predominant: general communications abilities, applied math skills, and problem analysis. Engineers can be viewed as more involved in defining the "WHY" of a problem, while the technician identifies "WHAT" caused the problem.

As the technician's hands-on technical knowledge base is expanded to include a better understanding of EMC effects -- e.g., cross-system, interplatform and other EMC skills -- his or her value to the overall team is expanded. The recognition of this capability will lead to better technician utilization in the overall EMC team effort. Today, technicians are not only providing compartmented EMC support, but are increasingly assigned leadership roles in such functions as test lab supervisors and managers in various areas of design and evaluation. For example, EMC technicians are providing a larger share of the leadership functions in test and laboratory support for EMC.

What does it take to become an EMC technician? First, EMC technicians need to have a strong background in instrumentation, particularly RF. Familiarity with basic RF and antenna theory is also a plus. A number of today's EMC engineers and technicians started with an Amateur Radio License, found that EMC was a good match to that radio experience and then, as their interest increased, evolved into their current field of EMC expertise without specific EMC training. It is not unusual for organizations and companies, in their first encounter with EMC requirements, to assign or select individuals from within their existing organizations to become EMC personnel, rather than hiring EMC specialists. In these cases, the individual is usually selected based on some previous experience related to the field of RF.

Why be a technician when one could advance to become an engineer? Many times, it is the personal

preference of the individual. Many of today's technicians state that the satisfaction obtained from their role as a technician was a key factor in their staying a technician. Technicians are usually front-line troubleshooters and problem solvers relating to test and instrumentation setups and EMC compliance issues. The sense of pride and contribution provide high levels of satisfaction. Also, many technicians believe that they are more challenged technically in certain support functions, than they would be as staff managers.

Today's EMC technicians are not limited to the bench, except by choice. Some have advanced to supervisory and semi-engineering positions.

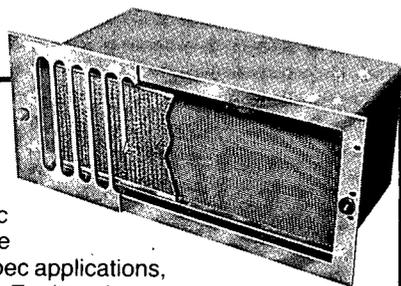
### CERTIFICATION FOR EMC TECHNICIANS THROUGH NARTE

The NARTE certification program for EMC technicians provides an

excellent basis for identifying and endorsing EMC technician skills to an established standard. It provides, for example:

- Acknowledgement of and matching capabilities among peers
- Recognition by the EMC community, co-workers and employers
- Means for technical and positional advancement within their organization

The basic requirement for certification as an EMC technician is a specific record of six or more years of approved experience in EMC technician work. Any experience gained by vocational or college study must be substantiated by an official transcript. A written exam is also required covering a minimum of 35 principles in EMC. Qualified technicians can be grandfathered before May 17, 1990 by submitting an application, three peer endorsements, and 10 questions to NARTE, P.O. Box 15029, Salem, Oregon 97309, Te1:(503) 581-3336. ■



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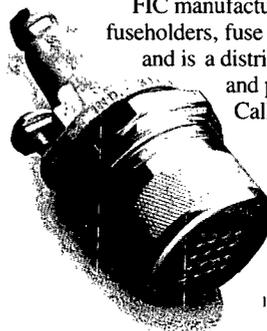
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