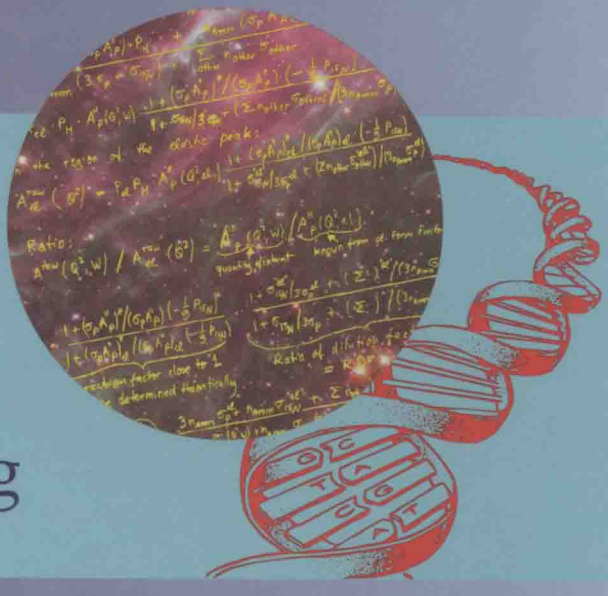
A Guide to Success for Technical Managers

Supervising in Research, Development, & Engineering



Elizabeth Treher, David Piltz and Steven Jacobs
Illustrations by Timothy Carr

WILEY

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A GUIDE TO SUCCESS FOR TECHNICAL MANAGERS

For Gus Walker,
one of the few original thinkers about R&D
management and special friend

PREFACE

Technical managers and supervisors, both new and experienced, face a variety of challenges in managing professionals whose personal styles, education, values, and attitudes lead them to prefer self-direction and independent work. Over the last 20 years, in answer to the question we ask in our workshops—*How many of you have worked for at least one outstanding manager?*—generally only 20 to 30% say yes. Perhaps 5 to 10% say they have worked with or known more than one such individual. This in large part contributes to the issues we see in those responsible for managing technical professionals—individuals are not learning managerial, leadership, and communication skills in school, and there are few excellent role models to coach, mentor, and lead by example.

The good news is that the number of individuals who now say they have worked for at least one excellent manager (20 to 30%) has doubled over the last 20 years, perhaps because more organizations offer effective training and coaching. Yet, there is still a long way to go.

This book is based on decades of experience in both managing technical professionals and teams and providing training and coaching to individuals from industry, national laboratories, government, and academia. Much of the content and ideas for the book originated with our programs *Supervisory Skills in R&D*, *Managing in R&D*, and others. Our thanks go to the thousands of technical professionals we have trained, coached, or managed over the last 25 years. Their insights, ideas, and stories are incorporated throughout the book.

If there is a single theme in most of the chapters, it is communication. We have included ways to use the Myers–Briggs Type Indicator® (MBTI®) in many of the chapters since it is a powerful addition to any communication arsenal. We have experienced the impact of the MBTI first hand both personally and professionally. Using only the MBTI, even dysfunctional, unproductive groups and departments have become positive and effective. Providing a framework to understand yourself and your colleagues better, the MBTI

helps us recognize our impact on others. It gives us a language to discuss differences and to realize another's approach may be different but that it is not wrong. The result can be humor, respect, and friendship so that our different ways become our strengths and are no longer an issue.

Rather than use strictly a management text format, the approach we have taken is to:

- Introduce a topic with a short case example(s) for analysis.
- Offer suggestions for handling the cases and real-world outcomes, when available, at the end of each chapter.
- Incorporate quizzes and assessments for self-diagnosis and development planning.
- Include content to review and consider.
- Have chapters stand alone as much as possible, considering the relationship between the topics.
- Provide checklists and tools for future use.

Examples include typical issues technology managers face. They serve as a tool for readers to "experience" a situation, to recognize and analyze the issues, and to think through how they might handle them. We provide approaches known to be successful for comparison. Also included is the Manager–Scientist Inventory, originally published by The Learning Key® in *The 2000 Annual: Vol. 1 Training* by Josey-Bass Pfeiffer. *Manager or Scientist: An Attribute Inventory*, was developed by one of us (E. Treher) with Augustus (Gus) C. Walker, a creative thinker who contributed to the development of many engineers and scientists. Gus made a transition similar to that of Elizabeth Treher—from leading technical professionals in research and development to a second career providing coaching and training and otherwise supporting the development of professionals in the research, development, and engineering (R&D&E) community.

We hope in this way to help readers build diagnostic and judgment skills, as well as to contrast and compare their own managerial approaches with those we have found to be successful.

We welcome input, suggestions, and learning about your alternative approaches. Please contact us at techprofessionals@thelearningkey.com.

Many of the concepts we present are not new. They can seem simple, especially in contrast with the technical knowledge and

skills necessary for career success and promotions to supervisory and managerial roles for scientists, programmers, engineers, and other technical professionals. The concepts are simple, their implementation is not. As our good friend Gus Walker points out: *It's not the power of the tool that makes it useful. It's the use that makes it powerful.*

We trust this book will lead to improved managerial skills and behaviors for you and many other professionals in technology-based organizations. Increasing the number of good supervisory role models in R&D&E will enhance the work environment for all non-supervisory professionals.

Elizabeth N. Treher
The Learning Key, Inc.

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CHAPTER 1

TIPS ON TRANSITIONS FOR TECHNICAL MANAGERS

TRANSITION SITUATIONS

Harry

Harry took a job at a prestigious laboratory eager to use his skills for new research projects and get to work. After only a few months, his abilities in the lab were clearly recognized. Leaders of this department of 100 decided to assign him 2 technicians, so he could be even more productive. Thus, for the first time for someone just out of school and new to the organization, they offered Harry the chance to become a supervisor.

Harry was astonished. He had never considered managing anyone, although he had been in supervisory roles in other jobs as he worked to pay for school. He felt he had gone to school and studied so he could do research himself, not to watch someone else do it for him. He loved his work and was anxious to prove himself. He felt he had no time, and little interest, to supervise anyone. Harry was afraid to say no, and so said nothing. He went home upset that night, looking forward to getting some advice from his family.

How would you feel in his place?

How would you coach Harry, if you wanted him to take a supervisory role?

See the end of this chapter for how the situation was resolved.

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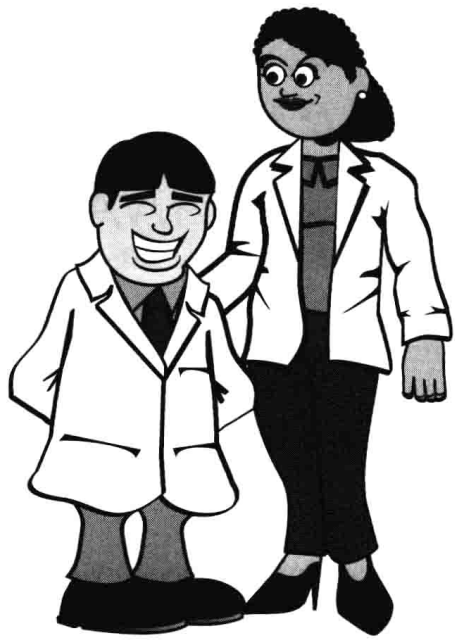

Anna

Anna, a highly respected geologist, had been working successfully for 7 years. She published frequently and was often an invited speaker. Anna was pleased to be offered the role of group leader to oversee a group of 35 geologists. She appreciated the recognition, salary increase, and renewed respect among her colleagues. She was well liked and she expected to have no difficulties as a group leader.

Five months after accepting the position, Anna admitted to herself that she was unhappy. She also had no difficulty in assessing the reasons why. She lived to be in the field, working. In her prior role she did field work for days at a time. In her current role, she spent most of her time in meetings and on administrative tasks. Her geology was mostly limited to talking with and reviewing her colleagues' work. Her reputation as a respected geologist was going to be jeopardized over time, but her biggest concern was being away from the work she loved. She missed her work and being outdoors.

If you were Anna, what would you do?

If you coached Anna, what would you say?

See the end of this chapter for how the situation was resolved.

Perhaps the most important, and certainly the least addressed, of the issues faced by technical managers are those experienced in transitioning to managing other professionals. Notice we didn't narrow this just to "new" technical managers or supervisors. Transitions occur in stages over an entire career. These transitions are not often recognized nor are their importance planned for or considered.

The most obvious transition occurs when a technical professional begins to manage one or more technicians or other specialists in his/her own field. One of the most challenging transitions cited by many workshop participants is that of supervising former peers—not knowing how to balance friend versus boss and being uncomfortable giving feedback. Certainly supervising a former colleague and friend presents challenges, but two even bigger issues for most are the shifts that need to occur in our motivations and work values. The ways we derive satisfaction from work and are comfortable being recognized need to change. This doesn't happen easily, as is seen in the answers to the questions:

1. How many of you have worked for at least one outstanding manager?
2. How many of you have worked for two or more outstanding managers?

The answers vary somewhat by industry and profession but in the groups we have worked with, on average, only 25% say yes to the first question. Perhaps 5 to 10% say they have worked with or known more than one such individual.

As one of our colleagues, Gus Walker, is fond of saying—every organization says it hires the best, gives them the best facilities, and demands the best. So what happens to these "best" professionals when it comes to managing others? There seem to be four keys to making a successful managerial transition:

1. Motivation to help others succeed
2. Willingness to give credit to others
3. Openness to other's ideas
4. Interest in taking new roles

Success in technical work depends on both skills and knowledge. Early in a career as a manager, you are assumed to have both. As your career progresses, however, you are no longer the person most able to perform a specific technical task. In other words, managers (U) pass through transitions that reflect their ability relative to their employees (E). These managerial transitions are important factors in our career growth.

There are three broad ranges for U/E. The typical situation, when a technical professional receives a first supervisory assignment, is U >> E. Usually, there are few direct reports, and they act as assistants or simple extensions of the professional. Since this relationship is similar to many found in universities, it is relatively familiar and comfortable, at least for the supervisor. However, greater skill, training, or experience in one area can convince U of superiority over E in other skills as well. This halo effect often leads to overdirection and micromanagement. It can also lead U to miss an E's special abilities. Generally, routine problem solving is more efficient in a U >> E situation with close direction. However, over time, groups are usually more effective when skills are distributed.

U ≈ E is the next stage and requires a transition. In this role, you and some of your employees have equivalent technical or other capabilities. The ability to handle these interactions is a critical test of managerial aptitude, and delegation is important to success.

This is a difficult transition for several reasons. We often continue to rely on the close direction that was successful when U >> E, even when it is inappropriate. Our training and experience often create strong feelings about the right approach to a problem, so we promote that approach. However, the same is true for employees who may resent having little influence on direction.

While problem-solving efficiency in U >> E depends strongly on supervisory control, success in U ≈ E depends more on collaboration and interactions with subordinates. This becomes increasingly important for generating creative solutions.

U << E occurs when a manager has a large organization, is in a new position, or is dealing with interdisciplinary teams. It does not suggest incompetence. Rather, it reflects the reality that organizational goals require the efficient use of expertise and other resources. This requires that tasks are integrated and prioritized—both needed additional skills. Managers should have a broad understanding of goals and the experience and ability to achieve them. Compared with U ≈ E, the manager has less need for personal technical competence. Authority and respect flow from general knowledge and the ability to manage resources.

These three transition stages are faced multiple times in technical careers and are most easily handled when they are recognized and thoughtfully considered.

Often we do not see ourselves as others do, and we make assumptions about our abilities to make such transitions. For this reason, one of us co-published the Manager–Scientist Inventory. We include it here as a way to gain insight into your managerial versus "scientist" preferences. Having a strong preference for managing or science does not ensure you will excel at either. Conversely, a low score does not mean you cannot become successful. The scores typically indicate a preference for one over the other and should give insight to those who have or will transition to the role of manager. The indicator has helped others better understand some of the issues they have experienced as managers or consider those they might face on moving to such a role.