
The Best Job in Aerospace

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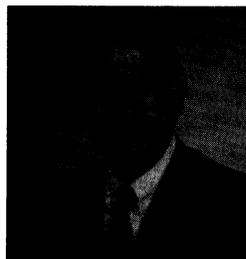
The program/project manager's job is, in my opinion, the best job in the aerospace universe. Whether one is working at NASA or in a private company, the program manager's job is often filled with frustration, stress, and risk-taking, but it offers opportunities and rewards unavailable anywhere else. Being a program manager means integrating a variety of disciplines—such as science, engineering, planning, finance, human resources, etc.—to accomplish an important goal, and really making a difference and seeing the result of your work. In short, program management is “being where the action is” in the development and application of exciting new technologies and processes.

The principles of successful program management are no secret, but they bear reiteration from time to time to remind us of the complexity of the program manager's job. In my view, there are seven key steps:

- **Pick the best people.** Getting the right people on your team, then putting them in the right slots, is what separates successful projects from also-rans. But selection is only the first part of the process. Then you have to train your people properly, give them the right tools, “empower” them to do jobs, and support them in their decisions.
- **Instill attention to detail.** Projects rarely fail because of large flaws. Usually, it's overlooking the seemingly small details that dooms otherwise sound programs.
- **Build in adequate reserves.** “Redundancy” has been a mandate since the early days of the manned space program, for good reason—repair shops are few and far between in space. Working in experimental programs such as NASA's requires having adequate margins, whether they be in funding, scheduling, computing capacity, spacecraft performance, and so on.
- **Design according to technical requirements.** While every project begins with a technical need, political considerations soon tempt project man-

agers to weave in other factors. To avoid such influences, you must build an inviolate shield around your project, insulating it against outside forces.

- **Avoid fixed-price contracts.** Space exploration is still an experimental and highly uncertain undertaking. Recognizing this, managers of NASA projects should accept the notion that fixed-price contracts are inherently out of place when one is pushing the boundaries of technology. This is a controversial concept in today's budget climate, and I would never defend bad management by a contractor. But the alternative philosophy—i.e., trying to eliminate risk altogether—could, over time, effectively destroy NASA's willingness to take risks.
- **Involve the user.** The emphasis in project management is on integrating representatives from both inside and outside the organization. Involving the customer at each step of the project makes him or her a contributor and proponent, not a distant, and often critical, observer.
- **Put quality first.** This management tool has long graduated from “buzzword” status to become one of the most potent techniques a leader has to build in performance at each step of the project. Quality cannot be “balanced” with other variables; it must be put first. If it is, then cost and scheduling will certainly fall into place.



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