Chapter 10
Conclusions and Recommendations

The JSF’s original plan calls for the DoD to select, at the beginning of Engineering and Manufacturing Development, a single winner to develop and produce this next-generation fighter aircraft. DoD officials are concerned about the suitability of that plan and have asked RAND to examine alternatives.

Our objective in this study was to define a range of opportunities and options open to DoD to introduce competition into the JSF program and to assess the balance of advantages and disadvantages offered by each option. The options included near-term actions that might be taken in 2000–2001 and longer-term actions that might be implemented later in this decade or even beyond, while the JSF is still in production. Except for the engine, which is currently being competed, all aspects of the JSF program were included in the study.

Several criteria are commonly applied to such an analysis:

- Reducing production cost
- Reducing operations and support costs
- Reducing cost growth throughout the program
- Encouraging innovation and quality
- Strengthening the industrial base.

The quantitative analyses we performed were primarily focused on the first two criteria; the other criteria were considered, but at a lesser level of detail.

We examined each competition option, some in more detail and more quantitatively than others, constrained only by the available time (about four months) and the effort level enabled by our client, the Under Secretary of Defense for Acquisition, Technology and Logistics. Throughout the study, we obtained critical information from the com-
peting program contractors, and we obtained additional data from the Joint Strike Fighter Program Office.

From our analyses, we make two recommendations:

- Stick with the winner-take-all strategy for near-term EMD and production of the JSF.

Despite the potential advantages that might accrue, we estimate that establishing a competitive production line for part or all of the JSF weapon system would require a front-end investment, together with increases in recurring costs, that probably would not be recovered through price reductions that might result from competitive forces. Even when considering all possible benefits from such competition, we are unable to make a persuasive case for establishing a competitive production source.

As a corollary, the absence of competitive pressures makes it vital that all government agencies involved in managing the JSF program use every available strategy to control program costs and to ensure high quality standards during production. A wide range of contractual and regulatory procedures is available to help achieve these goals.

- Policymakers should examine the costs and benefits of supporting a second industry team so that it could be capable of competing to develop and manufacture the next major upgrade of the mission system equipment.

The mission system constitutes the eyes and ears of the JSF and provides a powerful contribution to its overall combat effectiveness. Many of the enabling technologies are evolving much more rapidly than are most flight-vehicle technologies, and we can expect several major upgrades in mission system during the life of the JSF. It therefore makes sense to begin planning now for the first upgrade.

We suggest investigating the establishment of a “shadow” industry team to begin developing system architectures and component technologies that would be tailored to the JSF platform but would be focused on technological advancement, cost reduction, and any new mission requirements that might emerge. The team would be ready to provide competition for EMD on an upgraded mission system at some time in the future. This strategy would ensure that future managers
have the option of a competitive second source for designing, and possibly producing, future mission equipment upgrades, an option deemed valuable in the present stage of JSF development but that might not otherwise be available in the future.

Whether it will appear attractive to fund EMD and production by a second source in the future cannot be predicted at this time. There are too many uncertainties: the amount of progress made by the shadow team, performance of the system prime to that point, general economic conditions, etc. Our rough estimates suggest that such a shadow team could be supported in the near term at 10–20 percent of the annual cost of a full-scale EMD program for the mission system. Such an investment is not trivial, but it appears to warrant consideration.

Our charter was to seek ways to inject competition into the JSF program. At the present time, a shadow team appears to be the most attractive option. Within the scope of our study, we were unable to examine the idea in detail. Therefore, we recommend only that the notion be examined with an appropriate level of care and detail by the JSF management.