

# JAST . . . What Did You Have in Mind?

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When I learned that the Department of Defense was sponsoring a new program called Joint Advanced Strike Technology (JAST), my first reaction was: "Well, it's about time."

I imagined it was an exploration of technology in support of a futuristic surface-to-surface missile (SSM) with differential GPS terminal guidance, launchable from land or sea with a range of 400 to 500 nautical miles. I assumed it might be very fast and offer a family of warheads: deep-earth penetrators, variable high-explosives, incendiaries, runway-busting bomblets, etc. I reasoned that the years of analyses, which clearly showed that SSMs cost less and eliminate the political problems associated with sending pilots "downtown," had finally convinced decision makers to exploit the alternative of unmanned strike.

But—despite all the rhetoric about paradigm shifts, getting out in front, Force 21, and "Forward . . . from the Sea"—I was chagrined to learn that JAST is just another iteration in the continuum to create ever higher-technology, more expensive, joint, highly common, manned strike aircraft for an era in which it could be deemed irresponsible to send pilots against prominent fixed targets protected by formidable air defense—which, of course, has been obvious for only a decade.

Lest I be labeled a naysayer, I support the idea that periodically we should harvest the products from the national investment in research; it is the DoD approach that I cannot understand. To direct that the harvest create a new combat aircraft for tri-service use without defining the mission metrics, tactics, purpose, and requirements is starting at the wrong end of the problem. Such initiatives merely stimulate years of "inside the beltway" turmoil and debate while the less spectacular equipment that we really need—and could easily produce—never gets built.

Worse, during these periods our industry practically shuts down independent creative efforts because its most imaginative people become absorbed in trying to make a sow's ear look like a silk purse—a much more difficult task than designing an aircraft for a well-defined mission. We have at least 35 years of experience with efforts to collectivize products from research-and-development investments and shape them into loosely defined, cost-effective, advanced all-purpose combat aircraft: the TFX once seemed the ultimate example, but JAST may outdo it.

The assertion that we habitually start at the wrong end reflects my faith in the architects' creed that *form should follow function*. JAST is typical of the backward approach, however,

which assumes that the aviators can determine the mission after the aircraft is procured. Today, such efforts are much too expensive; the approach, which was "affordable" during the Cold War, is no longer appropriate. Today, new programs demand up-front mission analyses, need assessments, tactics explorations, and conceptual exercises using surrogate equipment—plus simulation and evaluation to define the system function.

Yet our community has again embarked upon an expensive design and construction exercise focused on "form," which historically breeds powerful technology-business coalitions and political constituencies that become virtually unstoppable.

If the intent was to exercise the aerospace industry to discover what is technically possible—with no specific service mission application—then the effort might be managed more appropriately at the Advanced Research Projects Agency or the National Aeronautics and Space Agency. The Pentagon might then extract the technology deemed useful for the future.

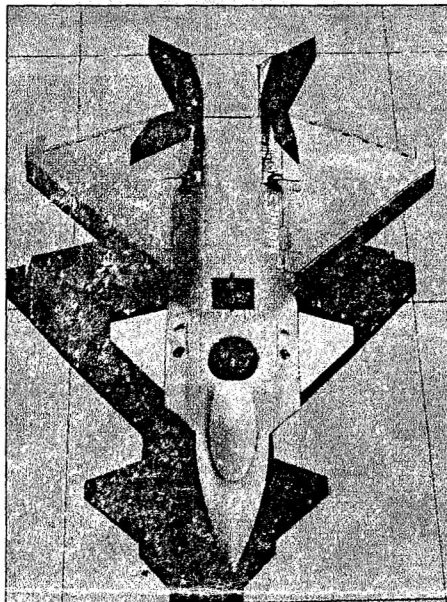
The JAST problem begins with the title, which cloaks it with the aura of a legitimate operational element with a validated military requirement—although, clearly, there is not. Further, because the program is embedded in the R&D structure of the Air Force and Navy, and by title infers a military mission, it becomes a target for innuendo and distortion regarding its possible utility.

If the intent was to launch one or more new combat aircraft programs to satisfy future military needs, then it was premature and misdirected. We clearly have more joint-strike capability programmed than we will ever need. Suggesting that such an aircraft could be useful for close air support (CAS) is as ludicrous as the claim that the AV-8B is suitable for CAS.

What are the legitimate mission objectives? Why do we need to pursue them? What are the alternatives? Can we adapt existing equipment—if not, what is the character of the equipment we need? In the absence of answers to these hard questions it is premature and counterproductive to project out-year budgets, draw pictures, build models, cut hardware, and create media hype and expectations that induce companies to make serious investments.

Based on previous form-first development efforts, the result is unlikely to yield anything of great military value. Since there is certainly no urgency, I suggest the program be categorized as a pure research project for use in conjunction with a futuristic response to a clearly defined deficiency.

To satisfy the R&D cartel's urge to do something, I suggest a period of deep thought about future needs and a serious assessment of what manned aircraft might possibly do that could justify the expenditure of billions of dollars.



LOCKHEED MARTIN SKUNK WORKS

Lockheed Martin's 86%-scale JAST test model features a shaft-driven lift fan and a vectoring primary engine nozzle.

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