

Report on a Report: Wisdom Between the Lines

An analysis of options for the future in "Space—America's New Competitive Frontier" could readily be dismissed as just another of the numerous such documents that have appeared over the years, even if this one was drafted by a group of university presidents and corporate chief executives. There is little new in the subjects of its recommendations: a space station, private-sector involvement, international cooperation, etc.

What makes this document unusual, however, is its hype-free sense of realism.

The report was prepared by a task force of the Business-Higher Education Forum. Co-chaired by the heads of Rockwell International and Caltech, the task force was set up in part to address the Forum's goal of helping to "guide the evolution of future relationships between corporate America and institutions of higher learning, while preserving their separate historical and traditional functions." That, too, sounds conventional enough, except that not many years ago, notes Forum Deputy Director Don Blandin, commerce and education viewed each other as adversaries across the barricades.

What first caught my attention was a brief paragraph on the subject of commercial development in space. The White House, NASA and various industrial groups have all spoken glowingly of its potential for the future (SN: 12/21&28/85, p. 392), even if they usually stop short of issuing bumper stickers that say, "We'll all get rich up there!"

But the task force report, while advocating several familiar areas of space development, takes a different tack. "The government must be careful," it says, "not to stimulate an industry before it is economically feasible to do so. Caution must be exercised against overstating the potential and over-promising the benefits of commercial space development."

Of course, this is only the context, not the substance, of the recommendations. But it reflects an overall point of view that is what gives the document its value.

About three years ago, for example, NASA signed an agreement with a private company that was going to produce, and market space on, a shuttle-borne package of materials-processing ovens in which other companies might want to try growing bigger semiconductor crystals and other products. NASA's role would be to launch the package free, in hopes of stimulating businesses for tomorrow. Under part 1 of the agreement, the company made a search to find out how many takers there might be. As a result, part 2—building the thing—was never done.

Only one of NASA's cooperate-with-industry-in-space arrangements has so far

actually produced something for sale: microscopic spherules, manufactured in orbit for use in testing earthbound laboratory instruments (SN: 8/10/85, p. 92). In the sole other such project that came even close to fruition, McDonnell Douglas Corp., a major aerospace contractor, used several shuttle flights to develop and test an electrophoresis device to make ultra-pure biological materials. But the pharmaceutical firm that was at first handling the biological end backed out of the deal, concluding that it could do what it needed in earth-normal gravity. A second company also came and went, and McDonnell Douglas was making plans with a third when the Challenger disaster brought everything, at least temporarily, to a halt.

The key message here is not that there's no future in orbital manufacturing efforts. Rather, it underscores the reasoning behind the task force's caveat against overselling the future. "The country is at a turning point," says the report, "which will determine whether the private sector is willing and able to assume major responsibility in [the space development] area, and if so, how quickly. . . . To provide the necessary foundation for applications-oriented endeavors, more basic research clearly is needed."

The group gave final approval to its report just four days before Challenger exploded, and afterward decided to go ahead and publish it, "consistent with President Reagan's request that the nation continue its pursuit of space initiatives." But the group's avoidance of vested-interest and preaching-to-the-converted rationales in determining recommendations should be a well-used principle, even more now than before the accident, when the choices for tomorrow are actually being made.

In an introductory "Call for Action," for example, the report cites America's distinguished record of past achievements in space. But in the next paragraph, where most such documents anticipate how wonderful the future will be, it notes merely that changes to come "will impact tremendously" — whether for better or worse — "on the lives of all those who inhabit the Earth By helping to shape the course of future events, we can better determine what the impact will be."

A few years ago, considerable attention was drawn to the concept of constructing inhabitable "colonies" in space, located at the so-called "Lagrange points" where the gravitational attractions of the earth and moon are essentially balanced. It was not until about two years later that public attention was drawn to the question of what such colonies might be used for. And when the most conspicuous sug-

gestion — that they might manufacture huge "solar-power satellites" that would beam the sun's energy to earth — declined in the face of various environmental and economic concerns, much of the space-colony idea's original impetus went with it. The notion is by no means dead, but as a planning guideline for the near future, it was perceived as a case of putting the cart before the horse.

Similarly, when President Reagan in 1984 declared a goal of having a permanently inhabited space station in orbit within a decade, neither the Defense Department nor many space scientists would support it. Various White House officials were quoted as deeming the plan to have the same weight as President Kennedy's announcement of plans for a manned lunar landing, yet many observers found such an assertion absurd.

What could such a station offer, they argued, compared to the uplift produced by Neil Armstrong's Giant Leap for Mankind? "Today's space program," says the task force report, "is not powered by a Sputnik-like affront to America's pride or a national goal of the magnitude of Apollo. Although the American people support the nation's space efforts, a sense of competitive urgency is lacking and a need exists for a broader understanding of the potential of space."

Over the next few years, the quest for that understanding is the real goal, the task force feels. Where private-sector involvement is concerned, the group says, "the U.S. aerospace industry and NASA have a good understanding of the overall potential of space and its technologies but a poor understanding of the potential markets. The largest segment of business (the non-aerospace sector) has the ability to assess the market potential but little knowledge of space or space technologies." As for putting the two together, "the tools are available if the nation's business leaders have the vision to use them."

The group sees its document as complementary to the upcoming report of the presidentially appointed National Commission on Space, which has been in preparation for the last year as an outline of possible U.S. space developments over the next half-century. But the business/education task force, with its refreshingly well-reasoned views of the nation's nearer-term planning options, could be of particular value if it reconvened to add its input to a more immediate concern: resurrecting the now-twisted space program from beneath the wreckage of Challenger.

"It would be a serious mistake," warns the report, "for the country to be complacent about the future." — J. Eberhart