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When, not if, we lose another shuttle, what then?

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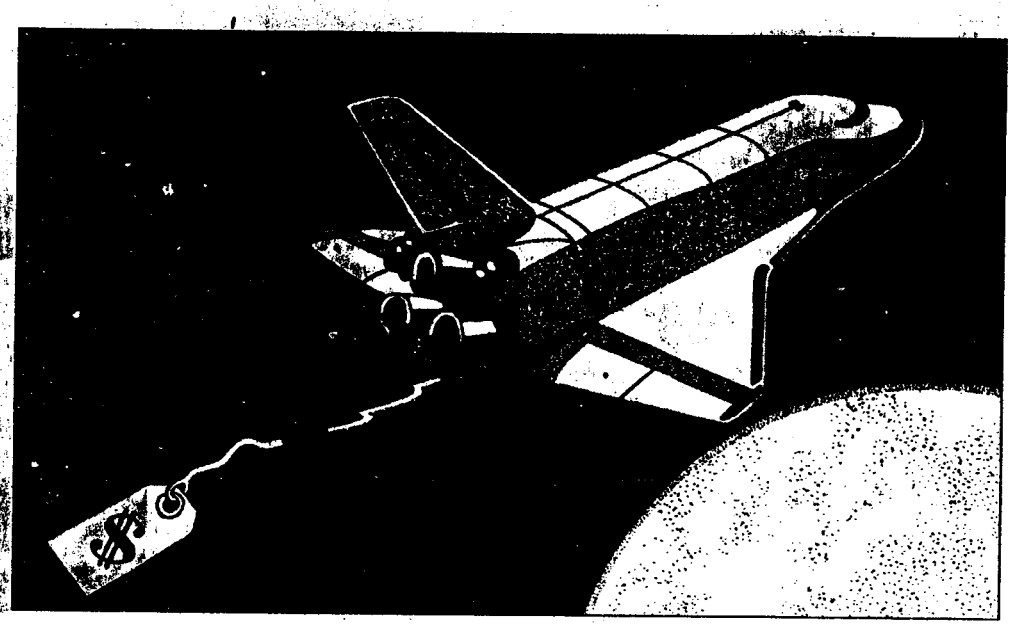

NASA'S grounding of the space shuttle fleet immediately following the recent discovery of cracks in the engines indicates the skill of the agency's professionals and its management's commitment to safety. But the cracks in the engines remind us that it is only a matter of time before we lose another shuttle, or perhaps the entire fleet.

Such a loss would not necessarily happen in catastrophic fashion as occurred with the Challenger in 1986, although the risks of spaceflight mean that such a disaster is always possible. Instead, the shuttle will likely lose its space worthiness for more mundane reasons, much like an old car dies a slow but inevitable death of high-mileage wear and tear. If the present mechanical problems had proved to be more systemic or difficult to repair, out of necessity we might today be discussing a post-shuttle space program. But even if the shuttle returns to its regular schedule in the near future, we should have this conversation now.

Even before the nation focused its attention on terrorism and the economy, in recent years the nation's space policies received little attention in Congress, among policy analysts or in the general public. With little discussion of alternatives, the National Aeronautics and Space Administration continues to pursue its post-Apollo program approach of "next logical steps," which began when President Nixon rejected the agency's ambitious proposals for a spectacular human mission to Mars. NASA kept its vision intact by settling on a more politically saleable series of programs: shuttle, station, then Mars. But without a political commitment to the entire set of steps NASA chose to pursue each on its own merits. Unfortunately, NASA's promises for both shuttle and station performance have fallen far short of realty.

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The space shuttle was sold on the basis of dramatically reducing the costs of launching payloads into orbit because it would fly 50 flights per year at a cost of $14 million per flight. It has averaged about five flights annually, resulting in an average cost of about $1 billion per flight. Ronald Reagan's 1984 announcement that the nation would build and fly a space station within 10 years and for no more than $8 billion simply provides a threshold against which to measure the program's growing costs — now estimated at more than $30 billion. Promised as either a platform for science or a staging base for a mission to Mars, the continually scaled back station faces constant criticism as to its purpose.

During the 30-year shuttle/station era, the American public through Congress has provided more funding to its space program than it did for the Mercury, Gemini, Apollo, Skylab and Apollo-Soyuz programs *combined*. This remarkable level of sustained commitment totals many billions of dollars each year, surely enough to support any of a wide range of alternative approaches to human space flight. But to invest wisely in the space program, decision-makers first need viable alternatives to choose from. No such alternatives are on the table.

The shuttle's current mechanical problems tell us that inevitably, and perhaps soon, NASA and Congress will face difficult choices about the future of the space program. Now is the time to begin a public discussion inclusive of a wide range of perspectives about what alternative post-shuttle space programs might look like. Absent such perspectives, when we lose a shuttle — and we will — one of the alternatives might be no space program at all.