

America's space program needs a shot in the arm

by Carol White

On April 28 of this year, a stinging criticism of the U.S. space program was issued by the American Institute of Aeronautics and Astronautics, at their annual convention. The AIAA is a 40,000-member group which mainly includes engineers, scientists, managers, and policy-makers in the aerospace industry.

At the conference, AIAA spokesman, Jerry Grey, reported upon a document issued in March of this year by the AIAA, *U.S. Civil Space Program, an AIAA Assessment* (of which he was one of three editors), which warns that the United States is headed towards second-class status as a space power, if the present NASA budget is not substantially increased.

The AIAA recommends a 40% increase overall in science, with a 100% increase in NASA funding devoted to basic scientific research. Grey criticized the penny-wise pound-foolish attitude toward budgeting which has hamstrung NASA over the past decade or more. As he said, and the nation learned to its horror with the Shuttle disaster, scrimping in the present only increases the costs downstream, and creates additional problems which effect performance adversely.

Grey and the AIAA argue for a U.S. space program which sets its goals first, as in the days of President Kennedy's Apollo program, and then determines the budget needed to accomplish the assigned task. Today, the reverse occurs, with NASA being forced to scale its objectives down to meet preexisting budget levels.

The report includes a comparison of NASA funding to that of other federal agencies, which shows a drop of 54% in funding from 1965 to 1985 (in 1985 dollars), compared to a total increase in government spending for Agriculture, Commerce, Defense, Education, Energy, Health and Human Services, Housing and Urban Development, Transportation, and Environmental Protection, of 157%. To take one example, the Environmental Protection Agency funding increased over that time by 974%.

They strongly recommended that the original program

for the space station be met, so that the decision to postpone it and plans to launch it in two stages be reversed, and they support development of expendable launch vehicles, and additional Shuttle capacity. They also emphasize that while safety is a predominant consideration in restarting the Shuttle program, it must be recognized that space-flight activities will always involve some degree of risk; therefore they recommend that all proposals for redesign take into account the need to rapidly gain regular access to space.

While the report gives favorable mention to the National Commission on Space recommendations for establishing a manned base on Mars, its objective is not to argue for specifics but to emphasize and reemphasize the necessity for the United States to have an aggressive space program. In this regard they draw attention to the role of the European governments and the Japanese in supporting their own nations' space programs.

They warn that by 1992 the United States is in danger of losing its large share of the high-technology aerospace market, and they point out how the foolishness of the U.S. failure to underwrite continued high technology development in space, is underscored by the enormous payback to such investment by increased tax revenues. To illustrate this, Grey related an amusing anecdote. Once Michael Faraday was asked what was the practical use of his discovery of induction. He replied that he didn't know, but assured his interlocutor that he would be taxing it in the near future.

The report

The following quotations from the AIAA report itself, make the case which we also have been arguing in *EIR*.

The first requirement [for a healthy space program] is a unified national policy which sets clear long-term objectives and makes firm commitments to their implementation. The Soviet Union, Europe, Japan, and China have made such commitments to strong space programs; U.S. preeminence cannot be reestablished,

nor can the U.S. participate properly in global space activities, without comparable action.

The AIAA report argues against excessive security measures, pointing out that the best security is in a high rate of development. To quote:

In all cooperative activities of this type [i.e., the space program], by far the best counter to foreign competition is to remain ahead in research and technology development. However, current technology transfer policy, aimed at preventing the leakage of unclassified technology, is considered by many to have adversely affected U.S. innovative potential.

In the section of the report devoted to an assessment of the U.S. Space Program they have the following to say:

Underlying the theme of this AIAA Assessment is the fundamental premise that a vigorous civil space program is a key element in promoting both national vitality and successful international relations, and that U.S. leadership in space is essential to the strength of the nation.

. . . The formerly healthy U.S. balance of trade in high-technology products and services has been decaying sharply since 1980-81 . . . and even the traditionally strong favorable balance in agricultural products declined from nearly \$15 billion in 1981 to only \$7.5 billion in 1986. Although the aerospace trade balance has remained positive during this period, foreign inroads, particularly in the still-small but rapidly growing space sector are building alarmingly. Foreign governments provide substantial support of space activities not only in the Soviet Union but also in Europe, Japan, and China, with the clearly stated intent of developing the industrial capability needed to take advantage of growing space-related global market opportunities.

Unless the government strengthens its support of U.S. space activities, particularly in the key areas of space transportation, applications technologies (communications and remote sensing), microgravity research, and advancing the basic science and technology that underlie all new development, the early U.S. lead in this important new economic area will continue to decay.

. . . The AIAA recognizes the urgent need for strong government-industry-university teamwork to return the nation's civil space program to its former preeminence, with the consequent benefits both to economic return and international prestige.

Criticizing the U.S. failure to adequately finance its space program—a problem which has been building since the end of the Apollo program—the AIAA rejects the current

insanity in Congress, which is building a climate of trade war against our allies. Instead they argue for the government to: “recognize civil space expenditures as an investment in the future industrial competitiveness of the country, and increase them appropriately as recommended above.” Reiterating their argument against undue secrecy they say about a joint effort to build a space station:

Benefits will be proportional to the vigor with which a nation employs the space station resource. If the U.S. investment in the program is not accompanied by a strong exploitation of the capability, the preceding precautions will be futile. The concerns that have been expressed by several members of Congress that NASA will “give away the store” in the space-station negotiations will then be real. But the best way for the U.S. to stay ahead of its foreign competitors, both in the space station and in other high-technology areas, is to move faster and more effectively than they do in research and technology development, not to bar their cooperative participation in developing new and potential valuable space facilities.

This AIAA report is a particularly important policy input right now, as we stand on the brink of the panic phase of a global economic collapse. It is precisely the kind of approach recommended by the AIAA, coupled with the goal of colonizing Mars and industrializing the Moon, in a 40-year period, which offers an alternative to the threatened economic chaos.

The significance of aerospace

The aerospace industry is significant in itself, but it plays an additional role in the economy, as that sector which, in general, develops and deploys the highest level of technology, which can then be disseminated throughout the economy. This, of course, was typified by the NASA Apollo program. It is no exaggeration to say that the vitality of the aerospace and associated industries determines the health of the economy as a whole.

The reason for this is not obscure. The health of an economy is determined by the rate at which it is able to generate new technologies, with the proviso that these technologies are themselves the embodiment of what might be termed technological phase shifts. Concretely, this means that a healthy economy generates technology waves, each one of which is more capital-intensive and more energy-intensive than the last. Such a healthy economy provides the resources necessary to support a growing population with a constantly increasing standard of living.

Advancement in technology is not a matter simply of enhancing or upgrading the “tools” of production; these “tools” must be deployed by a workforce which is capable of transforming itself in order to assimilate the new technology. One important parameter this can be seen in is the ratio of scien-



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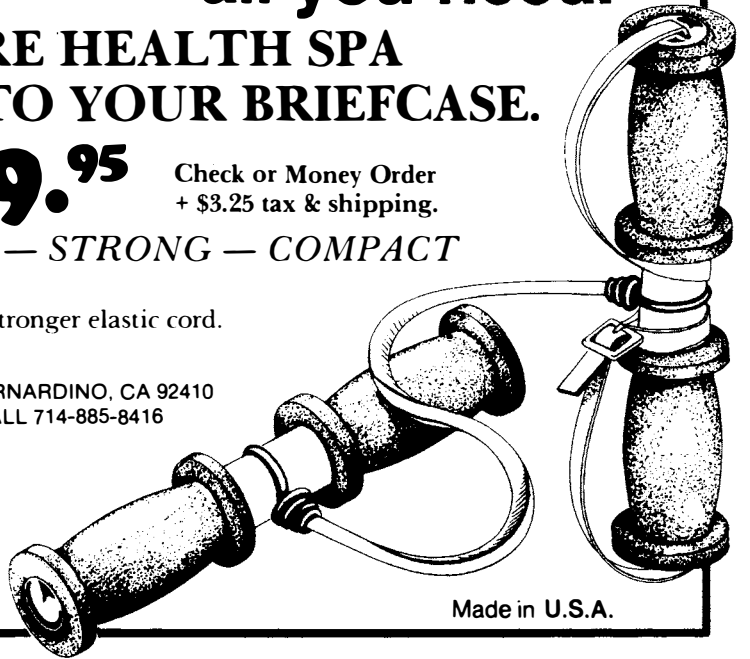
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