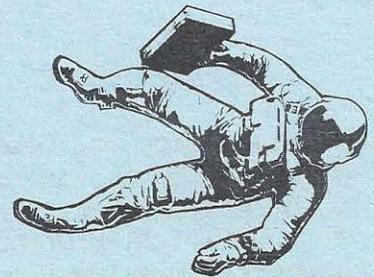


THE FOUNDATION

COMMERCIAL SPACE REPORT



PUBLISHED MONTHLY

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Dear Subscriber:

February

As promised in last month's Commercial Space Report, this issue will concentrate on the question of who should be responsible for the capitalization and operation of space activities, both industrial and scientific. We are not going to claim to have all the answers at this early stage, and we hope to stay away from dogmatism. However, we would certainly like to point out that dogmatism already exists among members of the space community when it is believed that only the Federal government, through the National Aeronautics and Space Administration, can or should be responsible for the future development and exploitation of space.

We obviously disagree, as the very name of this newsletter indicates. We feel that the private sector can and should supply the funds necessary for industrial development in space and that the private sector through a variety of mechanisms, could support a vastly increased role in the exploration of space in the near future. As it was before the Twentieth Century, exploration is a necessary precursor to exploitation and settlement. Thus there is both logic and incentive for a far-sighted private sector to adopt these roles.

Obviously the private sector has not been embracing this attitude wholeheartedly. Several reasons could be pointed to for this lack of enthusiasm. More and more so, the private sector is undercapitalized due to excessive taxation, over-regulated and directed by managers as compared to entrepreneurs. The philosophy that these individuals bring to the running of their organizations and corporations is not the philosophy that the Carnegies and the Edisons brought to their earlier organizations. As we have pointed out many times in the past, the technical means to both explore and exploit space are not lacking...the will and thus the financial means are. It is vitally important that we find some way to generate more interest on the part of those entities which presently have capital adequate for space development activities. We hope to address this matter in the next several months by talking about a few projects which might, because of their entrepreneurial nature, offer unique opportunities to involve the private sector (meaning the public also) in space ventures. We will also use as an example a private sector project presently underway in California and known as "The Viking Fund". You will hear much more about the Viking Fund in the coming months.

Now we must address the question that is on everyone's minds: "Why not NASA?" Why cannot the National Aeronautics and Space Administration take a more active, aggressive role in the future of space exploration and especially exploitation? Why not the public sector?

Why Not NASA?

When it was created out of the National Advisory Committee on Aeronautics in the late fifties, the National Aeronautics and Space

Administration collected together some of the finest scientific and technical minds of the nation, ultimately orienting them towards the man-in-space program of the sixties and the early seventies and also towards a vigorous exploratory program which culminated in recent years with the Viking, Voyager and Pioneer spacecraft missions.

We often hear that if only NASA were to be given a few billion dollars a year more, our problems would be solved. We'd have a bigger and better Shuttle, Satellite Solar Power Stations would be under development, maybe even space settlements would be on the drawing boards. Is this really an accurate view of the nineteen eighties as compared to the nineteen sixties?

We admit that this could have happened in the sixties. There was enough interest in space activities in general combined with a positive view of the future to make bold new endeavours possible. Besides being popular with both the technical community and the public, they might have even been technically feasible and financially affordable. But in the decade of the eighties, when politicians look but a few years ahead and money is tight for all branches of government, it is somewhat risky to assume that NASA can be an important force in the future development of space. The money is just not there.

At a recent conference, we learned that by far the largest portion of the Federal budget (more than half) is filled by the category known as "uncontrollable spending". That is spending mandated by the Congress years ago for programs such as pensions, Social Security and unemployment insurance. These programs make payments which rise as a function of the cost of living without Administration control of the expenditures. Another large portion of the budget, that of the Department of Defense, is obviously not going to be reduced. World security concerns suggest that, if anything, it will rise. Out of the remaining portion of the budget (which amounts to some fifty billion dollars) will come any cuts in Federal spending to meet lowered deficit targets to reduce inflation. One tenth of that fifty billion is NASA funding. It must be on the minds of politicians and administrators in Washington that this funding may be something that we can do without.

Thinking about that, we do not feel that all of us can assume that NASA will have the financial resources to engage in widespread development of space anytime in the near future. But we often hear that NASA is the only organization (as a proxy of the government) which could raise enough money to embark on a new ambitious "space program". Even the most vigorous proponents of an expanded aerospace/NASA-style space program have indicated that, at most, it would take four to ten billion dollars of additional spending each year to work technological and economic miracles in space. We agree with that estimate, though it may be high.

That amount seems like a good deal of money, beyond the reach of the richest private firms. But every year AT&T spends more than ten billion dollars just on new capital equipment. Exxon will spend more than six billion next year to look for and produce new oil and other energy resources. At one point not long ago, IBM had more than five billion dollars in cash or cash-like assets in the "bank". After all, the money that NASA and other public agencies use does come from the private sector, ultimately from individuals, in the first place. The message is this: there is more than enough capital available to exploit space. But there is probably not enough to engage in business as usual and fund space development. Companies will have to make choices about where they will

spend money and how much risk they want to take. Space projects must be designed to turn money around quickly so that space enterprises can create enough financing internally to support future projects. Therein lies the challenge.

Another problem with NASA is that it lacks an understanding of its mission. The National Aeronautics and Space Act gives the agency wide scope. But is NASA supposed to be an advocate for space activities? If you talk to NASA officials you will find out that they don't think so.

The activities of other Federal agencies make one wonder about this stance. Department of Energy advertising can be found everywhere these days, along with other agencies aggressive marketing of their wares, be it a new social program, an anti-smoking campaign, or the case for the MX missile. To hear NASA officials talk, however, this is absolutely not their role. They say that they stand to serve the President and Congress: if the administration or the representatives of the people want NASA to do something, then NASA will do it. But it will not be an advocate.

We have not overstated the situation. At NASA centers around the country as well as at headquarters in Washington you will hear this argument from NASA management over and over. We have been listening to it for a decade and it hasn't changed. There are no longer any strong advocates within the agency...the powerful arguments that men like von Braun could make for new, bold projects have been stilled.

All this is not to say that NASA is without merit. But our position is that the agency must at least not actively oppose efforts by those who want to make a future in space. Only then will the torch be passed to the next generation of dreamers and doers. The hope of that generation lies in private space ventures.

Sincerely,



Gary C. Hudson

NEWS NOTES:

GASAHOL MEETS SPS...California...Peter Vajk of Science Applications Inc. presented a plan at the AAAS meeting which combines two energy concepts into a single system for the Third World. Vajk suggests that 25 10-gigawatt solar power stations placed in orbit could meet the entire energy demand of India. As in many Third World nations, the need for industrial power is primarily in the centralized urban areas. This poses no problem for standard designs of solar power satellite receivers and power distribution systems. However, Vajk points out that the majority of the population live in rural areas and require

primarily energy for cooking and space heating. (At present in India this is provided by cow dung and scarce, high-priced firewood) Electrical distribution to these areas would be expensive and impractical. Vajk recommends large, centrally located plants which would use the SPS energy to manufacture methanol from air and water (gasahol is normally made from grain alcohol, or ethanol). A low technology system, distributing bottled methanol to villages, would provide needed fuel, jobs, and intervillage exchange.

SHUTTLE SOLIDS STACKED...Kennedy Space Center...Final stacking of the Space Shuttle's two outboard solid boosters was completed early in January. The boosters, which are part of the Shuttle's first stage launch system, were shipped to the launch site in four segments each. These segments were then assembled on the mobile launch pad in the Vehicle Assembly Building. Shipped horizontally, the cylindrical segments "slumped" slightly to an out-of-round condition that prevented the stacking of the segments on the first try in November. Techniques were developed to squeeze the segments back to a circular shape, and the process proceeded after the delay. The solids will be used on the first launch of the Shuttle "Columbia".

NASA TO LAUNCH PHARMACY LAB...St. Louis...McDonnell Douglas Corp. and NASA are working on a joint project to test the concept of zero-G pharmaceutical manufacturing. McDonnell Douglas will build a device to produce large quantities of enzymes, cells and other substances in zero gravity using a process called continuous flow electrophoresis. NASA will provide flight time on four Shuttle launches. The project involves no transfer of funds, but will hopefully mark a trend for greater cooperation between NASA and private industry. The substances produced by this process may be useful in treating many diseases, and are now exceedingly rare when they can be made at all.

SENATE COMMITTEE TO DELVE INTO MOON TREATY...Washington D.C...The Senate Committee on Commerce, Science and Transportation has requested the preparation of four reports on the "Moon Treaty". These reports are an early step in the detailed examination of the treaty by the Commerce Committee.

ORBITER TESTS COMPLETED...Kennedy Space Center...Several "dry runs" of the Space Shuttle's launch systems were carried out in late December and early January. These initial tests involve complete simulations of a shuttle mission. The only thing missing is the launch itself.

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The **Report** is published monthly, and has a subscription price of \$12 per year, \$20 per year for institutional and library subscriptions and \$20 per year for overseas airmail. Back issues are available at \$1 each from September, 1977. Xerographic copies may be substituted as stocks are depleted. Address all correspondence to Foundation, 85 East Geranium Avenue, St. Paul, MN 55117 or call (612) 370-0990. Editorial Direction: Gary C. Hudson;

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