

## **The United States at the Crossroads**

### **The Problem and the Issues**

Anybody observing recent trends in the United States can see that we are approaching a perfect storm of growing problems. One critical trend has largely escaped much notice – the degradation in our space-related technological capabilities. We believe it deserves more attention.

For a variety of reasons, including the distractions of growing public debt, increasing demands on entitlement programs, collapse of real estate values, rising energy costs, foreign entanglements, the collective public morale is in danger of collapse. A society that was vibrant, optimistic, positive, and energetic has evolved within half a century into a stressed, dark, pessimistic, cynical entity that looks to government to solve all problems by ever-increasing regulation and management of our daily lives. One of those negative trends deserves public discussion and debate right now.

The public is largely disinterested in space development other than mild interest provoked by pretty pictures obtained by space probes. Yet, the public is mostly unaware of how intertwined space technology is with our economy, our society, and our daily lives. Historically, our space program, and public support for it, was largely driven and motivated by the cold war with the Soviet Union. That competition gave us capabilities that returned the initial public investment many fold – instant world-wide communications, improved weather forecasting and other monitoring of conditions for agriculture, pollution identification, disaster characterization, national security, and the like. It has also given us the Global Positioning System. GPS is tied into essentially all commercial and financial transactions, provides precise aircraft and ship navigation, reduces the likelihood of campers and hikers getting lost, and is incorporated into auto navigation systems. That past competition with the Soviet Union also contributed to the explosive growth of microelectronics within the United States and changed the world as a result: Improved physiological and medical monitoring, telecommunications, cell phones, and cheap computer technology available to the average citizen. The Apollo era also drew tens of thousands of young Americans into schools of engineering, science and mathematics. Few of those young people landed space-related jobs, but they were so excited by Apollo that they earned advanced degrees in these fields in record numbers. After graduation they populated the whole spectrum of American industries.

NASA, as an engineering and scientific institution, serves the nation in two additional ways by providing:

1. continuity of expertise in the most complex technologies and sciences, assuring that hard-earned knowledge of past decades is passed on between generations;  
and

2. jobs to those who are interested and able to pursue the frontiers of such professions.

If our society is interested in ensuring jobs, then certainly jobs for high-tech super-skilled workers are critical to our economy and national defense. That is a no-brainer.

Despite the impressive returns mentioned above, the United States has already given away a monopoly on space launch systems and now controls only a fraction of the world's demand for space launch. Traditionally poor countries, such as China, India, and South Africa are aggressively pursuing space technology development even as the United States passively stands by and watches our capabilities dwindle, as our skilled work forces are dissipated and political warfare hamstrings further development. It is tragic, but if the United States were to suddenly launch a crash program to return to the Moon, it would take longer than it did in the 1960s – if it could be done at all.

Most of the public appears to mistakenly believe that a large fraction of the public budget is being spent on space. The sad truth is that space spending is a miniscule fraction of the federal budget – well under one percent and declining. Private enterprise stands ready to take up some of the slack by bringing the still massive economic and intellectual power of the United States to bear on this critical problem, but it encounters excessive regulation, inter-agency infighting, and turf battles within our government which, although well-intentioned, impede progress. The tragic result is that the United States, as a culture, is at a crossroads, and time is running out. One branch of the fork in the policy road will lead to continued economic growth, reduced pressure on the federal budget, re-creation of a now lost sense of optimism, and advances which will exceed most expectations. The other branch will lead to increasing cynicism, constant squabbling for dwindling pieces of the public treasury, financial instability, and stagnation. That second branch will also lead to the United States abdicating its position as a military superpower even as we live in an increasingly dangerous world. The choice of which branch will be taken must be discussed, debated, and decided now. Time is short.

### **The Choice**

We believe that the first path described above is the one that will be supported by the public if it were to be truly aware of the stakes at risk. Several changes in the current space policy of the United States could put us back onto the first and very positive path of economic growth and a renewed dynamism in the United States. Here is how to do it.

### **The Mechanism**

Federal spending on space technology should be stabilized at its current level. It is unrealistic given the state of the federal budget to expect increased spending.

Any programs that must survive over multiple congressional terms must be budgeted and funded in a stable fashion. Spending billions on a program and then cancelling after a few years (and after the next election) is not a wise investment. Space endeavors are

highly-skilled and complex activities. Repeatedly gearing up and then downsizing and delaying development is not only horribly wasteful of the public dollar but is also terribly damaging to the people involved in these industries.

The goals of NASA must be set to improve development in a stepwise fashion and the misuse of NASA as a pork dispensation device must cease. The task of shifting routine space operations to the private sector must continue and NASA should concentrate on development and exploration, not on routine operations.

Procurement rules for space development must be changed to escape from the deliberate low-balling of bids in a cost plus reimbursement climate. Planning for budget growth in the out years often leads to project cancellation.

Regulations to prevent dual-use technologies from being distributed internationally (ITAR) must be improved. Presently, ITAR effectively impedes the academic collaborations and cooperation that propel US scientific progress.

Oversight of all high performance aeronautical and space programs should be consolidated into one body. The presently balkanized congressional oversight process appears to outside observers to be designed to waste resources and ultimately fail. We propose the following concept for discussion: Create a congressionally authorized and funded agency roughly analogous to the Nuclear Regulatory Commission, the National Science Foundation, or the National Institutes of Health to set space policy, set short and long term goals, streamline the regulatory processes, coordinate the military and civilian needs for space technology, and the like. Change NASA from an operational space agency into a space development organization. Perhaps it should be subsumed into the agency proposed above.

The devil is in the details – let the debate begin.