Space: Caution Prevails on Post-Apollo Commitments

One of the murkiest questions in Washington today concerns the selection of new goals for the multi-billion-dollar space establishment after it realizes its primary ambition—a manned round trip to the moon in this decade.

NASA, whatever one may think of its objectives, has become extremely proficient, and the moon journey, which was suddenly proclaimed by John F. Kennedy when everyone was looking at the Bay of Pigs debacle, is apparently coming within reach. But what then? At this late stage in a business noted for its long lead times, the answer is that the administration is permitting NASA to do only the least that must be done to keep open a wide range of options. There is no big money to be had for beginning post-Apollo projects, and poor-mouth talk abounds in the seemingly affluent space community. Whether Lyndon Johnson retains his old fervor for space is difficult to determine; he still talks of it lovingly. But the political milieu around the space program is now dominated by Vietnam, exploding cities, and inflation. Consequently, space, like everything else, must pay up by foregoing ambitions. The difference in the case of space, however, is that years of planning, research, and building must precede any major venture. But at this point, no major project beyond Apollo has been certified, and little is being done to prepare for space ventures of the 1970's.

In its budget for the current fiscal year, NASA asked the administration for $264 million for the Apollo Applications Program, which aims to adapt moon-landing hardware for other purposes; the administration cut the request to $41.9 million. NASA's response to this cut has been to pinpoint some of the things that must be done now if a major hiatus in space activities is to be avoided. For example, last September, George E. Mueller, associate administrator for manned space flight, testified, "the decision to go ahead in the Apollo applications area should be made by fiscal year 1967. It will be critical to a continuing program, to the continuation of the Apollo program, because the lead times involved, particularly in the development of some of the subsystems and some of the experiments, are long enough to impact the follow-on Apollo work." In line with this, NASA announced a few weeks ago that it was taking steps—relatively inexpensive steps, costing $5 to $10 million—to keep Saturn rocket production alive beyond the present plans for just 12 of these great launch vehicles. Negotiations, it announced, would be conducted with Chrysler and Douglas Aircraft, builders of the two-stage rocket, to determine "which components and subsystems will require the greatest time for production. . . ." The announcement pointed out that "available engineering talent and experience built up during the program, which otherwise might be lost, will be utilized." A few days later the agency announced that it had awarded McDonnell Aircraft a $9-million contract to develop an air lock that would permit using a spent, orbiting rocket as a "large habitable space structure." And just last week another relatively inexpensive, long-lead project—to cost $35 million over 3 years—was announced: the development, under the direction of the Marshall Space Flight Center, of a telescope mount for a manned solar astronomical mission. NASA, however, made it clear that it was buying time rather than finally committing itself to the solar mission. The observatory, which is planned to investigate the maximum solar activity that begins in 1968, has been designated a "possible alternate" payload if it is decided that one of the 12 Saturns now planned for Apollo can be spared. However, not only does the moon goal come first but, at this stage, the duration and scope of the moon program are yet to be defined. Obviously it will not be all over after one round trip, but just how many are to follow has not yet been determined; and, amid such uncertainty and the current budgetary pressures, it is difficult to plan and prepare for what may come next.

What would NASA like to do post-Apollo? Undoubtedly, it would like to produce and preside over traffic jams in the celestial void. But publicly it has been so silent or vague that in July the House Science and Astronautics Committee directed the agency to furnish "recommendations on possible major national space objectives" by 1 December. NASA will, of course, reply with some bundle of papers, but, with the deadline less than 3 months off, there is no evidence that the agency will be permitted to issue a shopping list that might commit the administration to vast new expenditures.

At this point NASA's post-Apollo designs, if they exist, are well concealed in a rambling list of five alternatives that the agency furnished to the Science and Astronautics Committee just a year ago. In including them in a recently published report, "Future National Space Objectives,"* the committee noted that "these alternatives are only for advanced planning purposes by NASA and do not necessarily exhaust the possible alternatives." In any case, the committee found NASA reporting that, post-Apollo, it could orient its efforts toward emphasizing activities that have "economic benefits," such as weather prediction, communications, scientific research, and national security. Or it could move into a program with a "lunar exploration and science emphasis," including shelters and vehicles on the moon. Another possibility would be emphasis on "planetary exploration and science," including fly-bys of Venus in 1975 and Mars in 1978 and a manned Mars landing in the early 1980's. Then there might be what is referred to as a "prestige program," emphasizing "U.S. pre-eminence in Earth, orbital, lunar, and planetary activities." Finally, there is the "Balanced Program," which, since it has the most attractive label of the five alternatives, is probably closest to NASA's designs. Under the Balanced Program, the committee reported, efforts would be directed toward "direct benefits to mankind, lunar and planetary exploration, and scientific advancement."

The alternative that was not discussed by NASA or the House commit-

* Available without charge from the Committee on Science and Astronautics, U.S. House of Representatives, Washington, D.C.

tee is a sizable damping of the national space effort and the assignment of some of its resources to other purposes. Politically, that objective is still out of reach. The space budget of slightly over $5 billion went through Congress again this year without any real difficulty, but in Lyndon Johnson's harem of federal programs, space—once among the most favored—now has to contend with new conditions and new competitors. No one is talking about turning off the space program; obviously it is here to stay, and to stay at a fairly costly level, but many of the arguments that helped nurture it through infancy have not weathered too well. Coming into existence at a time when an East-West detente seemed to be in the works, it was ballyhooed as a benign substitute for war, a surefire way of stimulating technological innovations for the civilian economy, and a WPA for the aerospace industry. But now no substitute for war is needed; we have a real war. The "spinoff" or "fallout" argument long ago passed beyond the bounds of both economics and common sense. [Senator William Proxmire (D–Wis.), long a sniper at the space budget, recently remarked, "one would think that the purpose of the space program is primarily to provide fallout. . . . We could spend $5 billion on a cure for baldness—and sometimes I wish we would—I am sure there would be a great deal of fallout from that; but it seems to me that the program should stand on its own feet."] Finally, social planners in Washington are suddenly intrigued by the expertise of science-based, systems-oriented industry and wonder how it might be turned loose on the economic and social conditions that are producing virtual insurrections in cities across the country. There is no authoritative answer to this question. But suddenly there is less credibility in the arguments that the amounts spent on space are unconnected with the amounts spent on education, rebuilding of cities, health care, or other efforts directly related to human welfare. In the early days of the space program it was argued, and correctly so, that Congress simply refused to enact or put substantial sums into these programs, and that the good fortune of space was not at the expense of welfare. But now, since Johnson's remarkable success in winning legislative approval of his domestic program, welfare has been admitted to the public trough. The issue is no longer political certification of welfare programs; rather, it is what slice of the public pie are they going to get. And this brings them into competition with everything else, but most of all with the Vietnam war and space.

When the space budget came up in the Senate last month, Proxmire made his annual effort to trim it down. First he offered an amendment for a 10-percent cut. There followed a familiar debate, in which Proxmire and Senator Paul Douglas (D–Ill.) trotted out the standard antispace arguments, replete with quotes from generals who see no military value in the moon program and scientists who think the money should be spent otherwise. They were met by Senator Clinton Anderson (D–N.Mex.), who chairs the Senate Aeronautical and Space Sciences Committee, and Senator James Symington (D–Mo.). They argued spinoff, fallout, military value, national goals, technological supremacy. When it came to a vote, the Proxmire amendment was defeated, 65 to 18. Proxmire came back with a proposal for a cut of 3 percent rather than the rejected 10 percent. This, too, was defeated, but by a lesser margin, 52 to 31. (Since Bobby-Kennedy-watching is getting to be a popular pastime, it might be noted that the Senator from New York voted for Proxmire's space-cutting amendments in 1965 and 1966.

Whatever trend may be suggested by the two Senate votes this year, the fact is that the space budget sailed through by a very comfortable margin and was never in difficulty. The President obviously can count on Congress to go along with whatever he prescribes for space. The question is, What will he prescribe? With war in Vietnam and war in the streets undermining his designs for the Great Society, it is not improbable that Lyndon Johnson occasionally wonders about the wisdom of shooting $5 billion a year into space.

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Systems Approach: Political Interest Rises

The idea of applying the "systems approach" to the solution of domestic problems such as environmental pollution, traffic congestion, and crime control is, of course, familiar to the technically literate and to a growing number of public officials. Now some Republican congressmen and senators are giving notice that they will try to drum the systems concept into the heads of ordinary citizens and voters.

On 25 August, 44 Republican congressmen and ten Republican senators introduced legislation to establish a National Commission on Public Management as the first step toward implementing what the congressmen called a "revolutionary new concept." The congressmen said that their proposal envisaged having problems such as water pollution and urban blight farmed out by government to private industry, which would use the "modern 'systems management' approach and technology to develop and administer a comprehensive solution."

Senator Gaylord Nelson of Wisconsin, a Democrat, immediately derided the Republicans, indicating that they weren't the avant-garde politicians they pretended to be. "The support of these Republicans should be extremely helpful in enacting the legislation which I introduced last October," Nelson said. The Nelson bill—dubbed the "Scientific Manpower Utilization Act"—would authorize the Secretary of Labor to spend $125 million in helping states and universities (or other public or private institutions) to apply systems analysis and systems engineering to urgent problems.

Nelson noted that in 1964 Governor Edmund G. Brown of California —a fellow Democrat—had aerospace firms submit bid proposals for conducting studies in the fields of waste dis-