News and Comment

Soviet Space Feat: It Provides New Arguments for Larger Military Role, Undercuts Lunar Landing Critics

The Soviet Union's spectacular performance in space last week did not jolt the American psyche with the impact of Sputnik I, but in less visible ways it is having considerable impact.

The remarkable technical skills involved in the twin orbital flights of Major Nikolayev and Lieutenant Colonel Popovich are believed to have been available to the Soviets simply on the basis of past performance. The most extraordinary aspect of the flights, from the perspective of American experience, is that the Soviets were able to get the second rocket off on a pinpoint schedule, a feat which indicates a level of booster reliability so far unattainable in this country. Nevertheless, American space officials insist that the flights offer no basis for a decision to revamp and intensify this country's space effort in the far-reaching fashion that followed the launching of Sputnik I. They argue that we are doing all we can, and that, except in limited ways, no more speed can be added to the American space program. Thus, the Soviet feat is not likely to result in more funds for NASA, since under Kennedy NASA has been told to think big and has received everything it has requested. However, the flights serve as readily visible evidence of Soviet power, and in terms of their effect on public opinion they are potent stuff in the debates that have been developing over the scope and purpose of the American space effort.

Effect on Air Force

The most important effect of the Soviet feat is likely to be on the issue of the United States' military space effort, which the Administration is keeping in rein over the vociferous protests of the Air Force. In the current fiscal year, the Administration program provides for the expenditure of about $1.5 billion for research and development on military space applications. The sum, a modest one in the space market, is justified by the Administration on the ground that, at present, no broad military space applications are visible. The principal exception is in the field of reconnaissance, which is being pushed at a level that seems to satisfy the Air Force. Outside of the field, however, the Administration's present aim is to develop what it calls "technological building blocks" that it says can be quickly turned into hardware when needed. With lead times on weapons often running 5 to 10 years and sometimes beyond (the first successful operational flight of an Atlas ICBM came 11 years after development started), the Air Force is understandably distressed over what amounts to a go-slow decision. However, its opportunities for protest have been considerably reduced by Defense Secretary McNamara, who is managing his department's budget with a decisiveness and finality that severely restrict use of the previously successful tactic of appealing adverse decisions to the Congress and the public. Up until now, the best the Air Force has been able to do in opposing its restricted space role has been to make carefully worded speeches about the need to be alert to the military potential of space and to stimulate its contractors and the trade press they support to virulent denunciations of the Administration's military space policy. The most significant result from this campaign came toward the end of last month, when the Republican National Committee fell into line with the Air Force point of view and indicated that the Administration's military space policies would be an issue in the fall campaign.

In a joint statement, Congressman William E. Miller, chairman of the National Committee, Senator Barry Goldwater, chairman of the Senatorial Campaign Committee, and Representative Bob Wilson, chairman of the Congressional Campaign Committee, charged: "Certain signs indicate that the Pentagon is not sure where or how fast it is going in the direction of a military space program. . . . We feel," they continued, "that reversal by the Kennedy administration of previous policies has hindered the Air Force in its building of a strong military space capability."

Prior to last week's events in space the political potential of this line was probably not very bright, since the debate over the military's space role is fairly complex and has lacked a dramatic focus. The complexity has not been lessened, but the drama has now been supplied by the Soviet space achievement, and even intensified by boastful statements of Soviet marshals, who, conceivably, are having their own problems about extending their jurisdiction into space. Soviet Defense Minister Malinovsky used the occasion of the simultaneous flights to declare: "Let our foes know what technology and what militancy are in the possession of Soviet power." Similar views were also available in the West. Sir Bernard Lovell, director of Britain's radio-astronomy station at Jodrell Bank, stated that the Soviets "have a clear space superiority in the military, if not in the scientific sense. I think," he said, "the Russians have demonstrated that they are so far ahead in the technique of rocketry that the possibility of America catching up within this particular sphere in the next decade is now remote." He added that the Soviet feat indicates an ability to destroy American reconnaissance satellites.

Political Implications

The immediate reaction in the Administration was to deny that the Soviet space feat presented any new implications for military space developments. There was not so much certainty about the political implications. The existing decision to move slowly in military space work represents a calculated risk composed of elements that are extremely unsuitable for the charge and counter-charge atmosphere of a political campaign. These elements include the Administration's unwillingness to invest large sums of money in

space-weapons development until there is a reasonable assurance that the investment is necessary to counter Soviet space capabilities. At the same time, the Administration does not wish to intensify the arms race by extending it into new territory, and it hopes that a demonstration of restraint on its part may give the Soviets some incentive to refrain from looking too hard for ways to carry on war from outer space. Since there can be no certainty as to how hard the Soviets are looking, the "technological block" approach represents a compromise between falling behind and going so fast that the Soviets will conclude they have to make it a race—provided, of course, that they have not already come to that conclusion regardless of what the United States is doing.

Arms Race Risks

The decision, for whatever merit it may contain for influencing Soviet behavior, is based on assumptions that might be very difficult to defend in the stress of a campaign. The Administration is not going to acknowledge that it is moving cautiously on a line of weapons in the hope that its forbearance will set an example for the Soviets. Furthermore, it is not going to offer and defend the complex view that since the arms race has taken on a life of its own, risks involved in retarding its growth may be just as necessary as the risks involved in deterring Soviet aggression. This is a point that Kennedy made in his U.N. speech last September, when he said, "The risks inherent in disarmament pale in comparison to the risks inherent in an unlimited arms race." Soviet truculence on one side and right wing sniping on the other create an unhealthy atmosphere for this view, and little has been heard of it lately, although it occupies an important place in Administration thinking.

The potency of the military space program as a campaign issue is yet to be demonstrated, but already a number of administration officials have given hints of the response that will be offered. It is to the effect that the military space program *is* growing—a response which is factually correct, since the program is up about $400 million over the previous fiscal year. The amount, however, is still relatively insignificant in terms of the Air Force's desires, and without putting in additional funds it would be extremely difficult for the Administration to rebut the charge that it is not doing all that can be done to develop a military space force. If the Republicans choose to pursue the issue, they will find the Air Force eager to supply the details to support this contention.

The existing program thus could provide valuable ingredients for a "soft-on-communism" charge, which, in this case, is easy to hurl but quite complicated to deny. The easy way out for the Administration would, of course, be to head off the attack by putting additional funds into the Air Force's space program. The international consequences might then be the very thing the Administration is seeking to avoid—an acceleration of the arms race. But the domestic consequences might be to take a dangerous weapon away from the political opposition. Kennedy has a great deal riding on the outcome of the congressional elections—he has said that a handful of seats could spell the difference between enactment or defeat of major portions of his legislative program. It would therefore not be very surprising if the military space effort were to receive some additional support within the near future.

A less significant effect of the Soviet space feat was the undermining of the small but growing contention that the Administration is spending too much money on space. Whatever the merits of this view, to voice it now is rather like coming out against flood control the night before the deluge.

By coincidence, a number of protests against the moon project appeared in print shortly before the Soviets sent their astronauts aloft. Among these was a *Saturday Review* article, "What a moon ticket will buy—an incredible price stated in earthly terms," by Warren Weaver, former president of the AAAS. The article tallied up a number of worthy causes that could be financed with the $30 billion that is sometimes mentioned as the price of landing men on the moon and returning them to earth. Among these are salary raises for kindergarten teachers, gifts to colleges, fellowships, medical schools, universities for each of the 53 nations that have joined the UN since its founding, plus three more Rockefeller Foundations, with $100 million to spare. What was not mentioned was that the space program would not take the $30 billion from these causes; the United States Congress was not about to spend $30 billion for these worthy purposes before space demanded the money, and if space efforts were ended tomorrow, Congress would still not spend $30 billion on them. In addition, a good case can be made for these causes having benefited rather richly from the ferment and reexamination of national goals that was touched off by Sputnik. The colleges listed by Weaver may not be getting a slice of the moon project's $30 billion, but a lot of their students are having their tuition paid by the National Defense Education Act loans, which came into being in 1958 on the wave of excitement created by Sputnik. Perhaps there are better things that could be done with the $30 billion, or whatever the trip to the moon will cost, but as Congress is now constituted, the facts of political life are such that many worthy projects are federally financed through back doors opened by Soviet space achievements; otherwise the doors remain shut.

In response to the question of why the Russians did it before we did, the Administration has supplied the answer that so far has followed each of the Soviet's pioneering space achievements: they are ahead because they started first, but we have managed to come even or get ahead in everything but booster capacity. The evidence offered for this is 94 American payloads of all kinds placed into orbit, as compared with only 26 Soviet orbital shots. When the big boosters are available, NASA says, the edge will be held by the United States because of its skill in the other major phases of the space race: guidance, control, and life support systems. The result, according to NASA administrator James E. Webb, will be victory for the United States in the race to get to the moon.

NASA Optimistic

Webbs' optimism may be based on information not available to the general public, but a lot of knowledgable people feel that he is offering nothing more than a cheerful guess. The Soviets have not demonstrated any deficiency in space skills outside of the booster field, and on the basis of what they have accomplished in the past, there appears to be little reason to doubt that they are going to make good use of their present lead in booster power. NASA's confidence in the ultimate outcome of the moon race is

based on potentialities of the advanced Saturn rocket, which will develop a thrust of 7.5 million pounds. It is not expected to be ready, however, until 1965, if all goes well—and this, unfortunately, never seems to be the case in the tricky business of building new rockets. Meanwhile, the best the United States has to offer in the space race at present is the tried but not very true Atlas, which develops some 360,000 pounds of thrust. The Soviets have been cagey about announcing the thrusts involved in last week's flights, but they have said that Gagarin and Titov were carried into orbit by rockets of 800,000-pound thrust. Webb said there is no evidence that the Soviets possess larger boosters, but—unless NASA knows something it is not telling—there is no evidence that they do not, and if they do not, there is every reason to assume that they are working hard to build them.—D. S. GREENBERG

Announcements

The Germanium Research Committee, formed by germanium producers to promote the use of the element, announces that samples of the following **germanium compounds** will be furnished without charge for research purposes: R_4Ge (R = Et, n-Pr, n-Bu, n-pentyl, n-hexyl or phenyl.)

A summary of the projected research, or some indication of its nature, should be included in requests for samples. (G. J. M. van der Kerk, Institute for Organic Chemistry, T.N.O., 79 Croesestraat, Utrecht, Holland)

The University of Puerto Rico, under contract with the National Institutes of Health, has established several visiting professorships in **primate biology** for foreign scientists who will participate in activities of the university and of the Puerto Rican Center for Research in Primate Biology. Appointees will collaborate in primate studies aimed at determining the perinatal causes of cerebral palsy, mental retardation, and other disorders.

The center now houses rhesus monkeys in laboratories and at the free-ranging colony on Santiago Island near the coast of Puerto Rico. Two other islands—Cueva and Guyacan—were recently acquired for the project and will provide space for additional monkeys imported from India. (William F. Windle, National Institute of Neurological Diseases and Blindness, Bethesda 14, Md.)

An **Inter-university Consortium for Political Research** has been created to promote graduate research training and basic research on problems of politics and government. The consortium staff, headed by Warren E. Miller of the University of Michigan's Survey Research Center, plans to provide advanced training in social science research methodology and the techniques of political analysis for faculty members and advanced graduate students from the 21 participating schools. Research conferences on new problems in theory construction and data collection and interpretation in such areas as legislative behavior, judicial behavior, and the historical analysis of aggregative data will be developed for participating faculty members.

Consortium activities will be supervised by a five-man council, chaired by James Prothro, of the University of North Carolina. Other council members are David Easton, of the University of Chicago; Robert Lane, of Yale University; Austin Ranney, of the University of Illinois; and William Riker, of the University of Rochester. (Warren E. Miller, ICPR, Survey Research Center, University of Michigan, Ann Arbor)

Grants, Fellowships, and Awards

The International Association for Dental Research has established three awards of $1000 each for basic research in **oral therapeutics, oral science**, and **periodontal disease**. Nominations must be accompanied by a biographical sketch, including date of birth, list of publications, specific identification of the work on which the nomination is based, and an evaluation and appraisal of the nominee's accomplishments. Nominees need not be members of the IADR. Deadline: *1 October*. (R. S. Manly, Tufts University School of Dental Medicine, 136 Harrison Ave., Boston 11, Mass.)

Nominations are being solicited for the Atomic Energy Commission's 1963 Ernest Orlando Lawrence awards for contributions to the development, use, or control of **atomic energy** in any area, including medicine and engineering. The five awards, ranging from $5000 to $25,000, will be presented to U.S. citizens who are under 46 years of age on 1 July 1963. Nominees who are not selected will be retained on the list for 2 years for further consideration. Nominations should include a brief biographical outline, with principal emphasis on the scientific or technical achievements upon which the nomination is based. Deadline: *1 November 1962*. (Chairman, General Advisory Committee, AEC, P.O. Box 3528, Washington 7, D.C.)

Applications for clinical and basic-science fellowships in **cardiology** and related research are being accepted by the Central Ohio Heart Association. The 1-year fellowships, effective 1 July 1963, carry stipends ranging from $2800 to $8000. Research projects are to be carried out at an accredited institution in central Ohio. Candidates must have a Ph.D. degree and a minimum of 1 year's internship. Deadline: *15 October*. (Central Ohio Heart Assoc., 145 N. High St., Columbus 15)

The New York Heart Association is soliciting nominations for the newly established Homer W. Smith fellowship in **renal physiology**. The 5-year fellowship for research at any U.S. institution provides a first-year stipend of $10,000, beginning 1 July 1963, with annual increments of $1000. Nominations should include a letter from the chairman or director of the sponsoring department or institution, biographical data, a bibliography of research, and a statement of qualifications. Deadline: *1 November*. (Advisory Council on Research, N.Y. Heart Assoc., 10 Columbus Circle, New York 19)

Postdoctoral traineeships for research and teaching in **endocrinology** are available at the University of Wisconsin. The program includes laboratory research, seminars, colloquia, workshops, and teaching. Medical candidates may obtain postdoctoral training in clinical endocrinology and metabolism. Annual stipends are $6500. (W. H. McShan, Birge Hall, University of Wisconsin, Madison 6)