

(Contract NASW-91)

## RESEARCH MEMORANDUM

PUBLIC OPINION AND SOCIAL EFFECTS  
OF SPACE ACTIVITY

Joseph M. Goldsen

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Assigned to \_\_\_\_\_

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This paper briefly discusses the American public reaction to Soviet success in the space race; the response of Congress in relation to public opinion; the objectives and programs of NASA's information activities; the impact of space activities on education and training; and some of the broad social and economic implications of the space era.

1. American Public Opinion<sup>1</sup>

Judging from the response of the press and spokesmen in many branches of political, scientific and public life, the American public was badly shaken by the sudden Soviet success in being first to launch an earth-circling satellite vehicle. Government officials, executive and congressional, demanded immediate action to offset the Soviet technical and propaganda success.

Despite the concern attributed to the public, there exists only a handful of polls and systematic investigations that analyze and interpret the impact of space activities on the hopes, fears and expectations of the American public.

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<sup>1</sup>The following discussion presents for the most part hypotheses rather than solidly based findings.

One study is based on polls taken just after the successful orbiting of Sputnik I and again in May 1958. It concludes in part that most Americans believe this country is running neck-and-neck with Russia in a race for world scientific supremacy and that each country is better in some areas of science and second best in others. The study also found that "an overwhelming majority" of those polled, if forced to choose between spending money for medical research, for research on juvenile delinquency, for basic sciences like chemistry and physics, or for putting the first man on the moon, "would give doctors the dollars." The percentage of opinions favoring basic research increased with the educational level of those interviewed.<sup>2</sup>

A report of the Jet Propulsion Laboratory summarizes opinions collected from the Central Intelligence Agency, the U.S. Information Agency, the National Academy of Sciences, "and numerous laymen." No description is given of the sample or methods used in this survey, but the "answers" given are suggestive and provide leads for more thorough investigation:<sup>3</sup>

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<sup>2</sup>Satellites, Science and the Public: A Report of a National Survey on the Public Impact of Early Satellite Launchings -- for the National Association of Science Writers and New York University Survey Research Center, University of Michigan, 1959.

<sup>3</sup>Report No. 30-1, Section IV, "Public Reaction."

1. Question: What space experiments intrigue people most?

Answer: Something leading to the detection of life in some other part of the universe. This problem interests people far and away more than anything else. There is a tendency to confuse this goal with the engineering achievement of putting a man in space.

2. Question: How do people respond to failure in space experiments?

Answer: It takes some of the surprise element and hence psychological impact out of a later success. The psychological payoff is not as high. However, failures are considered as worth it, if a "first" is obtained. "Firstness" is much more important than avoiding failure.

3. Question: What experiments will possibly offend the world public?

Answer: Many people would be offended by radioactive contamination, and possibly by the chemical and biological contamination of other planets. This is not something that currently worries the general public. The same groups that are vitally concerned with contamination and conservation on the earth tend to be concerned. One source indicated that an attempt to put a man in space which resulted in his death would seriously disturb the public.

4. Question: What experiments will worry the world public?

Answer: There is not much to be said here, except that some people have an aversion to earth reconnaissance satellites. This is part of a feeling that "Big Brother" is looking over their shoulders.

5. Question: Should space flights and experiments with military overtones be avoided?

Answer: No! Most people feel that all space experiments have some military connotations. (It was intended that the American IGY and Vanguard programs not be associated with military programs. However, this point was not understood or accepted by the public.) A guidance-development experiment would have clear military implications, yet an American success in this field would be very well received.

6. Question: Co-operation by the United States with other nations is one of the goals of the National Space Act. What geographical areas are most sensitive to their being included or excluded from the Space Program? Where would the political payoff be the greatest?

Answer: (1) India, (2) Egypt, and (3) Japan. Unfortunately, Egypt does not appear to have much to contribute to the space exploration program. The USIA tentatively suggested that tracking stations in the Philippines and in Indonesia would be helpful.

7. Question: What were the principal political gains made by the Soviet Union with Sputnik I, etc.? Did the United States lose face?

Answer: The United States did not lose prestige directly, but Russian statements gained credibility. This has been particularly noticeable in the Near East.

8. Question: How should advance publicity on the nature of space experiments be handled?

Answer: This question is apparently too difficult for most people to answer. The CIA emphasized that suppressing the news on firings was very difficult, and, indeed, rather

precarious. Distinguished scientists generally gave emotional responses to this question, indicating their displeasure with most news reporting. They appear to favor announcing firings or experiments only after the event. However, they were very critical of the one instance where a satellite firing was kept secret until after the launching.

9. Question: Should considerable effort be put into an educational program utilizing mass communication media, such as motion pictures and television?

Answer: The CIA and USIA emphasized that problems of properly informing the public could not be left to Madison Avenue. Scientists must take the initiative and responsibility of learning the techniques of presenting information to the public. Scientists will need the assistance of professional public relations personnel, but the principal responsibility of formulating an educational program must rest with the space scientists themselves.

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12. Question: Should the results of scientific experiments aboard space probes be made available to everyone as soon as it is physically feasible to do so, or should it be released in the traditional way at the scientists' discretion?

Answer: A poll of one hundred engineers and scientists showed a 5-to-1 preference for making the results public as soon as possible.

Samuel Lubell, a thoughtful analyst of U.S. public opinion, has produced an interesting set of observations based on his

own polling shortly after the initial Sputnik launchings.<sup>4</sup> He found little evidence of public hysteria, an underpinning of typical American optimism about future U.S. success, a tendency to view Soviet success in the least threatening light, but a considerable apprehension that the need to increase greatly the national expenditure on space and missile technology might jeopardize the booming economy.

The explanations of the Russian success and what it meant for the future, as reported to Lubell by his small sample of respondents, were direct reiterations of those offered by the President:

In no community did I find any tendency on the part of the public to look for leadership to anyone else -- to their newspapers or radio commentators, to Congressmen, or to men of science. Nor, with some exceptions, could people be said to be in advance of the President, or to be demanding more action than he was....I would judge that the public will follow the President in whatever he asks to support a greater defense effort -- but that if the President does not ask for enough the public is not likely to demand that more be done....In a democracy a sound state of public opinion requires not only that the public be told the truth but that the government act on the basis of that truth. Words and actions must go together.

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<sup>4</sup>"Sputnik and American Public Opinion," Columbia University Forum, Winter 1957, pp. 15-21.

## 2. Congress and the Public

The Congress, closely in touch with the American public as it is presumed to be, does not take at face value the oversimplified expressions and measurements of "public opinion." Each Senator and Representative recognizes that not all of his constituents are equally concerned with every issue. He is responsive both to the views and interests that he senses among his constituents and to his own sense of responsibility to promote the national welfare as he sees it.

There is no doubt that the 85th and 86th Congresses believed in the national need for a vigorous and sizable program of space activities. The Congress has tended to view the "space issue" as a vital matter affecting the peace of the world and U.S. national security.<sup>5</sup> But there are differences over the best means to achieve shared goals. Resources of money, talent, and scientific knowledge are limited. Other national goals compete for the allocation of these resources. Different evaluations are put on the competing goals as well as on the efficacy of alternative means for reaching them. In the end, compromises rather than a consensus lead to decision --

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<sup>5</sup> See not only the text of the National Aeronautics and Space Act of 1958, but the Reports of the Senate Special Committee and the House Select Committee which shepherded the bill through the 85th Congress, summarized in another of the present series of reports.

or to indecision and inaction. The public is a party to the debate in so far as it expresses its preferences and has the means for convincing the decision-makers in the Congress and in the Executive offices of its desires. It seems to be generally understood that "public opinion" will follow if leadership takes the lead.

At the present time NASA does not have as clear-cut a body of followers and supporters as the military arms. Behind the several armed services are present and former members of the armed forces, their associations, publicists, industrial contractors, and enthusiasts with powerful voices, united on one broad objective despite internecine disputes over budget allocations and assignment of missions.

NASA, in the years to come, will develop a body of support drawn from special sectors of the population -- scientists, engineers, the more adventure-minded youth, industrial suppliers, and others who believe in the contribution that civilian-run space activities can make to the achievement of peace, economic well-being, and scientific discovery. Until there is a widespread and firm belief in the contributions which space programs can make to one or another of these objectives, there is likely to be a continuing need to build support for large-scale space programs through a clustering of diverse objectives which are in some degree interdependent and mutually reinforcing.

### 3. Information Objectives and Programs of NASA

Government-supplied information about space activities and other scientific matters can do much to make people aware of what is happening and what is expected to happen in the future. It is clear that "information" is most effective when used to give context and interpretation to deeds and actions. But words are also acts in themselves and are viewed as such particularly by well-informed segments of the public and by governments abroad in certain circumstances. An absence of self-restraint in our words or a lack of co-ordination among various major expressions of our policy may have varied results: at the time of debate the result may be clarification of purpose and direction; at other times the net effect may be apathy, disappointment, confusion, or opposition.

In dealing with the public-opinion consequences of previous Soviet successes, and in planning for the contingency of future Soviet successes, it is generally recognized that solid technical achievement is a necessary foundation for developing sound political policies and strategies regarding astronautical activities. Stunts and unfulfilled promises rarely carry the same conviction or impact as actual performance.

NASA is obliged to give the widest possible dissemination of information consistent with military security requirements.

It is obliged to keep the Congress and the public informed. The press is constantly alert not only to the withholding of "news" but to the "management" of the news on behalf of broad national objectives. How to square the important set of values condensed in the term "freedom of the press" with the pursuit of other important national goals and values presents great difficulty.

All that can be stated here is that official and unofficial statements not only reach the American public and its representatives in Congress but also register on the world public and governments around the earth. The information policy of the NASA Office of Information Services should give adequate consideration to consequences abroad as well as to the needs of the American public. There may be times when such consideration will indicate that precedence should be given to the international consequences.<sup>6</sup> The co-ordination of information programs toward the furtherance of national objectives is a prime need.

The attitudes held about American intentions and activities in space are influenced not only by technical accomplishments in

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<sup>6</sup> For an earlier discussion of this problem, see J. M. Goldsen and L. Lipson, "Some Implications for U.S. National Security of Activities in Outer Space," Research Memorandum RM-2004, The RAND Corporation, Oct. 1957, SECRET.

space, but also by programs of international co-operation, U.S. diplomatic measures, and dissemination of information. Attention might be given to the development by NASA of close contact with groups of the public through "museums of space," science clubs, amateur hobbyists of a technical bent, assistance to school systems, service to teachers' groups, etc. Such activities might be proposed and evaluated in some detail. There is a possibility that the job both of meeting the public need for information and of achieving helpful effects abroad can be served significantly by such means, and often with greater effectiveness than by publicity alone.

#### 4. Education

NASA's rate of growth may have a substantial effect on the capacity and direction of American education and technical training. NASA's growth could be slowed down by shortages of skilled manpower and by inadequate quality of scientific and engineering manpower.

The existence of a large space program provides many incentives for young people to adapt their vocational choices and preparation for such careers. The sense of adventure, drama, curiosity, and novelty in space activity, though hard to measure, is probably a powerful predisposing factor. When

combined with job opportunities, the motivations are formidable. Yet these are not enough in themselves to assure NASA or the nation of an adequate pool of scientific talent.<sup>7</sup>

The school system, from primary to postgraduate levels, is besieged with problems: the pressure of population upon understaffed schools, poorly trained and underpaid teaching staffs, outdated or misguided curricula, obsolete facilities, and the like. The spokesmen for organized education are vocal, influential, but far from uniform in their recommendations of what needs to be done. The magnitude of the space program inevitably will call upon the school systems to adapt their curricula in the direction of better scientific training. Scientists with broad outlook are well aware of the need for better liberal education; they are aware that a good general education provides a good foundation for specialized scientific training.<sup>8</sup> NASA might well give thought to the problem of to what extent, if at all, it ought to join in the great debate on revamping our educational system. The existence of the space

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<sup>7</sup> NASA testified to its need for better trained scientists in a statement submitted to the Senate Authorization Subcommittee, printed in Part II of the Hearings on the NASA Authorization for the Fiscal Year 1960, p. 797.

<sup>8</sup> See the provocative article by Caryl P. Haskins, "Science in Our National Life," Foreign Affairs, October 1958, pp. 19-30.

program itself has already set in motion certain new educational imperatives. Very possibly NASA might best provide a service to education through information and interest-building activities rather than through direct participation in the debate itself.

American youth does not need to be "sold" on space. Already, according to the American Rocket Society, there are some 10,000 amateur builders of rockets (of whom 162 were injured in a recent six-month period).<sup>9</sup> The important problem, as some see it, is that this enthusiasm and spirit of adventure be developed in a context fostering an appreciation for the basic goals of science, the meaning of a scientific attitude and career, and the relation of science to our cultural and political heritage.

NASA must necessarily be selective in its activities on behalf of educational objectives in view of its great need for high-quality staff. Programs of fellowships, in-house apprenticeships, co-operative activities with such agencies as the National Science Foundation, the National Academy of Sciences, and private foundations and universities, are among the many avenues worth continuous exploration. NASA, as part of its

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<sup>9</sup> A detail in NASA's program would be to assist amateurs -- and to help them stay alive.

program of international co-operation, may want to establish "international schools" like those of the AEC.

NASA is not a "Department of Science" and probably will never become one. But it does offer one important means of release and expression for man's deep yearning to understand the universe and to explore the frontiers of knowledge. This intangible opportunity is one of NASA's great assets. It is hard to translate such a function into budget justifications and itemized programs, but the value of responding to such an important psychological need should not be dismissed merely because it cannot be "costed."

##### 5. Social and Economic Implications

Scientific and technological achievements in space will raise certain "non-scientific" problems in human society. The advent of manned space flight and the gathering of evidence of some forms of life in existence outside the earth (if such should be the case) will have a profound impact on the immemorial questions asked by man of himself, his philosophers, and his gods.

There may be upsetting psychological and social reactions to observation satellites if people believe that they or their nation are under constant surveillance. A complex of problems

might ensue from a barrage of audio-visual communication from visible space vehicles; from even partial weather control; and from the mundane but significant impact of space industry, with its by-products, new industrial processes, and new materials.

NASA might find it fitting to encourage serious interest in the study of such questions. Imaginatively designed social research projects could be started. NASA's Committee on Long-Range Studies (authorized in Section 102 [C-4] of the National Space Act) has a unique opportunity to promote an understanding of the world we are re-making. It can help to unite social scientists and physical scientists in a concerted and continuing effort to assess the political, social, and cultural implications of the rapidly changing technological environment.

Such research would serve not solely as a contribution to better long-term understanding on the part of the nation's intellectuals and as a means of enlisting their interest and support. Many of these studies, if well conceived and carried out, will offer valuable insights and suggestions for NASA's guidance on international co-operation, information policy, economic consequences, the role of other countries in "space politics," and many other problems.

