DEPARTMENT OF THE AIR FORCE
OFFICE OF THE SECRETARY

MEMORANDUM

COL WORTHMAN W.
LT COL QUIGGINS

This is a copy of the speech on "International Aspects of Space Applications" which was to have been given by Mr. Fruthin, NASA on 21 Feb 66 at a symposium on the West Coast.

I understand that the press of other business (and a trip to Europe) precluded Fruthin's participation as session chairman and lecturer at the symposium. The speech was written by

and, I presume, presented by a Mr. John D. Iamo of NASA Hq.

This is the speech that Mr. Mazza inquired about. I have passed a cy to Mr. Mazza.

MAJOR YOST
28 Feb 66

Policy: 18 Points
Policy: Peaceful Uses
Policy: Space Law ✓
Functions: NASA

TAB 101

INTERNATIONAL ASPECTS OF SPACE APPLICATIONS

ABSTRACT

Space applications are already proving their early promise in communications, meteorology and navigation. The prospect of using satellite photography, radar and radiation sensing for surveys of natural resources appears equally exciting. All of these applications involve interactions with other nations, since they operate on a global basis. Neither purely selfish national use nor unrealistic internationalism seems to provide practical solutions to the employment of applications satellites in the years to come. Consequently, there is a demand for research and sober study to find ways to adapt this new technology to the betterment of mankind. From this AAS session may come a recognition of the need for further research, for further discussion, and for development of practical policies to deal with the political, legal, and economic problems we have yet to face.

INTERNATIONAL ASPECTS OF SPACE APPLICATIONS

John D. Iams *

In the National Aeronautics and Space Act of 1958, Congress asks that space activities be devoted to peaceful purposes for the benefit of all mankind. The United States has pursued this objective with dedication and imagination. It has joined together with 47 other nations to bring communications to the world on a non-discriminatory basis, bridging oceans and continents with the Early Bird satellite. It has made meteorological data from TIROS cloud pictures directly available to any country willing to make a small investment in ground read-out equipment. Potential users are now discussing a common satellite navigation system. This, too, may become an everyday reality once general agreement can be reached.

These are but small steps, however, toward the wider horizons of space applications. Technology now promises help in tackling an even vaster problem: the gathering of information about the resources of the earth--resources that man must be able to use if he is to live decently on this planet as its population grows. Later technical papers will discuss some of the techniques involved.

For the purposes of this session, we can assume that sensitive satellite instruments may, in the not too distant future, be used to help man map out and better understand the earth's natural resources. Photographic techniques, high resolution radars, the mapping of magnetic and gravitational fields, and the detection of other radiations from the

* NASA Headquarters, Washington, D.C.

earth's surface are all part of this general technique. Data so collected will then enable scientists to open up new bodies of mineral ores, to survey the forestry resources of continents, to locate the best fishing grounds in the oceans, or to spot, in advance of earth-bound observation, the onset of crop diseases and the invasion of insect pests.

Done from a satellite, such environmental prospecting lacks at present the intimate detail of ground survey or aerial photography. But the very scale of satellite photography compensates for this lack of detail. Other countries have already asked us for photographs of their territories taken with a simple, hand-held camera during recent Gemini flights. One nation hopes, for example, that much time and money may be saved in a hydrological survey by a single color photograph from Gemini. This one picture may substantially reduce the amount of aerial photography and ground survey work required for the evaluation of its water sources.

These applications of space--communications, meteorology, navigation, and satellite prospecting--operate on an international scale, spanning traditional geographic and political barriers. These systems cut across national boundaries, without a backward glance at history.

This discontinuity which space seems to introduce between past and present leads some to ignore existing national and international institutions, interests, and patterns. One such oversimplification has been to regard the satellite as a purely national instrument whose application therefore requires no resort to traditional political and economic practices.

Another oversimplification has been to regard space as so revolutionary as to be untreatable except by revolutionary means. Those who hold this view forget that the world is still composed of individual nation-states with differently organized functional and regulatory interests. They despair of

conventional solutions and seek to internationalize space applications, hoping that all problems will be swept away at the United Nations.

Probably, the truth lies somewhere between these two extremes. Neither total internationalization nor traditional diplomatic practice may be sufficient to handle space applications on an international scale. Moreover, it appears that neither individual nations nor international bodies are yet wholly conditioned to the new technology.

Consider the oceans, for example. The principle of freedom of the high seas has long been established. Some 23 separate international bodies deal with the distribution of data regarding the oceans. They regulate fishing and ship traffic, and deal with the safety of shipping. Each of these bodies is highly specialized. To date, at least, few have considered seriously their relationship to a satellite which may simultaneously chart ocean currents, point out the best commercial fishing areas, measure the erosion of coast lines or the silting up of harbors and watch for errant icebergs or the danger signs of a tsunami.

To whom should the data from such a satellite be reported? To the country that put it up? To all nations bordering the oceans? To scientific organizations preoccupied with oceanography? To the International Ice Patrol? To the International Whaling Commission? Or to such regional bodies as the Interamerican Tropical Tuna Commission? Each of these entities has its specialized interests, yet none is fully equipped to analyze or distribute information about the resources of the oceans as a whole.

The same argument may be applied to agriculture. Satellite systems may be able to furnish vital crop census statistics on a global basis. They may also be able to detect the early incidence of plant diseases and perhaps warn of the failure of an entire crop or of the migration of insect pests. Over

70 international, intergovernmental and non-governmental bodies have been created to handle agricultural reporting, to disseminate information, and to regularize the economics of this ecologically dependent industry. As with oceanography, no single body appears equipped to handle the truly global sweep of a satellite survey of agricultural conditions, with its attendant political and commercial implications.

We may conclude then, that the applications of space to our terrestrial economy are not fully met by existing national or international arrangements. Neither purely selfish interests nor unrealistic internationalism seems to provide the practical solutions needed in the years to come. What may be required is an enlightened self-interest diffused with a recognition of the international character of space applications and the possible need for new or revamped human institutions. Consequently, there is demand for research and sober study to find ways to adapt this new technology to the betterment of mankind. It is to this--the investigation of the international framework within which space can best benefit man--that we dedicate this session today.

In this session we shall proceed from the case history of an actual space application--already tested by the challenge of international reality--to the yet untested future of space prospecting for natural resources. If from this session we emerge with a recognition of the need for further research, for further discussion, and for development of practical policies to deal with the political, legal, and economic problems we have yet to face, then this AAS session will have been a successful pioneering effort.