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MEMORANDUM FOR: Director, NPIC ~~XXXX~~

SUBJECT : Use of Intelligence Satellite Resources  
for Non-Intelligence Applications

I. Introduction: The purpose of this paper is to present the background and current environment facing the intelligence community, especially NPIC, with respect to the increased use of reconnaissance satellite resources for non-intelligence requirements. These requirements have been termed "peaceful uses" and cover a multitude of applications which fall into four broad categories:

- a. General intelligence (related to targeting).
- b. Scientific - volcanism-seismic disturbances and glacier movements.
- c. Economic - mineral resources exploration, disaster relief, crop analysis
- d. Enforcement - narcotic crops, pollution sources.

The distinction between intelligence and "peaceful uses" requirements in the past has been quite clear. However, the present changes in international conditions are changing some of the peaceful uses categories into intelligence requirements also. This will have continual managerial effect on NPIC and other organizations as the use of the reconnaissance satellite imagery is expanded and broadened to include new technology.

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II  
III. Changing Imagery Exploitation Environment and Problems of Adaptation:

In many respects the problems being faced by the intelligence community today, caused by the desire of the civil agencies to expand the application of satellite imagery are similar to those faced by the military and the civil agencies in the twenties and thirties when the airplane and aerial photography started to come of age. The military controlled most of the airplanes and all of the cameras. This led to many of the conflicts which are present today such as more requirements than capability. In fact, if one looks at the history of aerial mapping and reconnaissance starting in 1918, the identical conflicts between geometry and resolution were present. Also, the seeds of some of the prohibitions imposed on the intelligence community were planted then. For example, the military air services were used for delivery of the U.S. mails and for spotting bootleg stills. These practices amongst others have resulted in legislation which prohibited the military using resources at their command for domestic uses which could be done under contract by private industry or by the civil agencies with their own aircraft.

While many of the problems to be faced today are parallel to those faced thirty to forty years ago, today's problems are more restrictive in that legislation is more definitive or precedents which have been well established must be changed.

The National Security Act of 1947 specifically prohibits CIA from police, subpoena, law-enforcement powers, or internal security functions. However, decisions have been made to use intelligence resources for a variety of other domestic uses, although both U.S. public and private sectors are most sensitive, as all know. In general, intelligence imagery collection resources appear to be considered legitimate for domestic use, but intelligence imagery exploitation resources are not. There is some precedent for this step in that military resources have been used in this manner in the past. Natural disasters have been photographed by

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military aircraft since the inception of these programs. Also aerial photography for domestic mapping was flown by military aircraft until a commercial capability was developed in the 1940's.

In addition to the tendency to approach the development of remote sensing by satellites in a parallel manner as was employed for aircraft, the following factors also dictate this expanded non-intelligence use of the imagery intelligence reconnaissance satellites.

1. The NRP satellites are the only source of continuous operational space imagery. The NASA mission is research only and none of their programs, with the possible exception of the shuttle, are designed to lead to operational systems.

2. The quality of the NRP data far exceeds that from the NASA systems.

3. The expense of satellite operations is of such magnitude that the nation cannot afford duplicative systems for both civil and intelligence applications.

The pressures which tend to limit the use of space platforms for open earth observation are again a combination of the old and the new. Precedent developed during the era of the airplane recognized nations' rights to control data on their own resources by reason of agreed application of sovereignty to their airspace. Bilateral and collective agreements established the third nation concept and in almost all cases adhere to the practice of furnishing the "host" nation a copy of the collected data as a portion of the price for being allowed to collect data. For example, all of the U.S. bilateral mapping agreements contain this provision. They also state we will not make the photography or maps available to a

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third country without the express approval of the host country. Current civil practice, under NASA leadership, differs from this precedent in that it provides aerial and space photography to any interested customer either foreign or U.S. national.

The other constraints which are not based on prejudice or international law practices are:

1. Capability of the NRP systems to meet the broadening requirements of the civil agencies while continuing to meet the requirements of the intelligence community.
2. The impact of civil applications on the security of the National Reconnaissance Program.

III. Efforts to Cope with Problems and Changing Environment: Studies begun in 1966 by the Corps of Engineers indicated that large benefits could accrue from the application of T-KH photography to civil purposes. These studies concerning disaster relief, dam site locations, highway alignments, airport site selections, and flood control were briefed to the Office of Science and Technology (OST), Department of State (AID), Department of Agriculture, Department of Interior (USGS), Office of Emergency Preparedness, Department of Commerce (NOAA), and CIA. As a result of these briefings, an interagency task force was set up. It completed a study and an agreement was signed in 1967 between the President's Science Advisor and the Director of Central Intelligence establishing the "ARGO" Steering Committee as the mechanism to further these studies and secure the required photographic coverage.

The organizational aspect of ARGO was a committee, chaired by OST, and made up of the DCI's representative and representatives of Interior, NASA, Agriculture, Commerce (NOAA), Corps of Engineers (USA), State/AID, and Office of Emergency Preparedness (OEP). The term "ARGO"

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was adopted back in 1967 by the individuals involved to cover their examination of applications of the more sophisticated intelligence remote sensing systems to "peaceful uses" of the "old line" agencies.

During its approximately five-year life, ARGO saw the formation by Interior of space and facilities at Reston - secured for intelligence imagery and made ready for use by all "old-line" agencies to begin applications of intelligence imagery. Imagery was used to help build a data base at an emergency relocation site for a Government control center (under OEP auspices). NPIC provided technical and procedural counsel to ARGO on exploitation matters and assisted Agriculture and others on a spot basis. When the time came for consolidation of "old-line" requirements [redacted] ARGO members could not get their requirements together and the ARGO effort eventually folded. Whatever the reason - whether the agencies involved pinned their hopes on NASA's ERTS-A and Skylab programs (unclassified, but mainly poorer resolutions) as opposed to the harder-to-use higher resolution classified intelligence materials is somewhat beside the point for this paper.

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In any event, ARGO's needs continued - the engineers and EPA have asked respectively for help from intelligence imagery systems regarding flood threats and water pollution, and these two have been assisted by limited NPIC services. This was the last case to pass through the now virtually fully dormant ARGO.

Since the announced demise of OST and transfer of its Presidential Science Advisor role to NSF in January 1973, there have been efforts to make some new plans to replace the ARGO Steering Committee as the intelligence community interface with the old-line agencies in the remote sensing field. The pollution, flood, and other earlier ARGO interests have now been joined by new problems. OMB's [redacted] Federal Mapping Task Force has

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recommended a new intelligence interface with civilian mappers, including requirements procedures, to the Director, OMB, claiming major savings. This has now been cleared by OMB for release to departments and agencies for comment. Discussions have been held between representatives of the DCI [redacted] and Henry Kissinger's office [redacted] to interface NRO and an existing non-intelligence inter-agency committee on remote sensing systems plus a COMIREX subcommittee, or, better yet, a non-intelligence panel to be chaired by Interior on "peaceful uses" requirements for collection by intelligence systems - intelligence personnel working with the latter committee would not be responsible for establishing the "peaceful uses" requirements. Reportedly, major U.S. companies involved in denied area oil and gas deals have now approached the USG for classified imagery developed information, thus conceivably adding to civil applications demand.

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For several years an interagency committee on NSAM 156, chaired by State (Undersecretary for Political Affairs), has examined the question of declassification of the fact of the intelligence satellite operation and related political questions. To date NSAM 156 has not caused a change and the classification and control remains in effect. Currently, USIB has approved certain proposals, which in turn, if approved by the President, should enlarge the military and domestic non-intelligence applications effort due to decontrolling and lesser classifications.

In addition to the USIB action, a recent letter from the Administrator of NASA to Secretary Schultz also requests changes to the national policy involving earth observation from space. NASA is suggesting that they be assigned the lead in deriving a new space policy, and that they be given responsibility for an operational program involving both collection and exploitation of remote sensed data to solve certain economic problems. They suggest a pilot study of "a global food crop(s)" to start this effort. This has implications for role-playing in economic intelligence.

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An interagency committee, chaired by State and set up under NSSM 72 has been studying the question of USG policy options on world-wide remote sensing by ERTS-A and follow-on systems. Legal questions, national and international, are involved. Questions of economic advantages and disadvantages for the U.S. and other nations have been contracted out for cost/benefit examination to private industry. Matters of dissemination of earth resources data and possible collection organizations are being examined in connection with the economic advantage/disadvantage matters and all these are related to the matter of sustaining the U.S. position of "right-to-observe." At the present time, Interior, State, and NSC are attempting to define the terms of reference for the continuance of this effort.

ERTS-A and Skylab systems have already affected intelligence agencies, Defense and State. NPIC performed evaluations of ERTS-A film in its earliest days in terms of quality and intelligence value. COMIREX has a review group function for Skylab to which NPIC has contributed. This group has been determining the probability of observing both foreign intelligence targets and U.S. targets in Skylab's unclassified imagery. This is done in connection with pre-mission orbit select/camera operations and in interpretation of imagery received. Recommendations are made by the group which contacts its parent agencies regarding positions to be taken on political risk, U.S. military information, security, etc. associated with subsequent dissemination of film. As stated elsewhere in this paper, these two systems raise many questions bearing upon the USG position of "right to observe."

As world conditions change, items which a few years ago were considered primarily as "peaceful uses" are now also of concern to the intelligence community. This is exemplified by the Soviet wheat study which is currently underway to determine the utility of intelligence and ERTS imagery to assist in forecasting Soviet wheat crops and current assessment of harvest results. Combining

  
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metrology, KH-imagery, and ERTS IR imagery for this purpose is an ad hoc group of ORD, OER, and NPIC working with an ORD contractor [redacted] on a 6-7 month contract. Domestic and Canadian ground truth is being obtained on winter and spring wheat crops for purposes of comparison to the Soviet crops. The OER-ORD petroleum studies are also indicative of this change in intelligence requirements.

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For the past few years there has been an increased effort by the USG against a rising drug traffic and use. Intelligence roles have increased considerably. NPIC has been participating in studies to determine the utility of remote sensing of poppy and marijuana fields.

NPIC has established a photo interpreter branch to determine new applications of imagery. The primary function here is to support NPIC in its intelligence role - in line with priorities. However, it would seem that in its freedom to explore new uses for imagery, there could well be some new applications which would assist the non-intelligence agencies of Government. These would be appropriate for transfer under an ARGO-type arrangement or as a straight intelligence support matter.

IV. NPIC Role in Changing Environment: NPIC's role in all of the ARGO effort was a cautious one -- limited to providing technical and procedural assistance to the non-intelligence community in response to specific requests by the Steering Committee and in support of the DCI representative to ARGO. At the same time great care was exercised by NPIC to avoid providing "too much" help so that these agencies would not "bother" to help themselves. Also, NPIC took care not to get its intelligence people in a line capacity for domestic functions - for example, NPIC refused to commit PI support in national domestic emergencies due to natural disasters while at the same time permitting limited technical non-interpretive assistance when necessary in connection with

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classified film. Our technology was made available to ARGO along with many of our procedures to assist the civil agencies planning for the use of ERTS-A. The NPIC role with respect to new applications must evolve within the frame work of intelligence interests. However, this in itself may be a considerable change as indicated by the following passages from the DCI's Annual Report on coordination of the U.S. Foreign Intelligence Effort:

a. "Responsibility for U.S. foreign economic policy is quite decentralized and most of the key consumers of foreign economic intelligence are outside the intelligence community as usually defined. To improve guidance in this field, I have recommended that a representative of the Washington economic community be added to the NSCIC, and that appropriate problems of economic intelligence be placed on the agenda of the NSCIC Working Group by the Executive Director of the President's Council on Economic Policy, who is also chairman of the newly-created Requirements Advisory Board."

b. "The USIB Economic Intelligence Committee (EIC) took the lead early in the year in setting up an improved mechanism for the consolidation and coordination of the foreign intelligence needs of all agencies concerned with U.S. economic policies. A new publication, the Economic Alert List is now published every four months on each of the seven major regions of the world and is disseminated to all economic offices in the field (encompassing State, Treasury, Commerce, Agriculture and AID) as well as to intelligence collectors. The EAL's, which transmit the information needs of Washington economic analysts, had their starting point in the economic affairs section of CIA's Current Intelligence Reporting List (CIRL). Economic requirements have been modified where appropriate in both the IPC List of the USIB Interagency Clandestine

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Priorities Committee and the Intelligence Guidance for COMINT Programming (IGCP) developed by the USIB SIGINT Committee. In addition, a "Coordinated Statement of Priorities on Economic, Financial and Commercial Intelligence Requirements Worldwide of the Washington Intelligence Community" was developed by an EIC subcommittee and sent to all diplomatic and consular posts and missions by the Department of State. Twenty-one different components of the Washington economic community coordinated this statement, which will be updated annually."

The photo interpretation techniques developed to support intelligence requirements in the economic field will be equally applicable to domestic problems and hence should be passed to those organizations with responsibility for the domestic programs. The source of photography for domestic programs may or may not be from intelligence resources. Also, the Center needs to become more familiar with techniques being employed by commercial and other Government organizations to exploit imagery to solve problems in fields such as geology, agriculture and industrial capability since these would be applicable to the foreign intelligence requirements.

While the restrictions on the intelligence community in the area of domestic applications and the limits on collection capability indicates a cautious approach to peaceful applications, the increased intelligence interest in economic issues will require the NPIC to take considerable initiative if we are to be in a position to respond rapidly to new intelligence requirements which are developing.

IV. Summary and Conclusions: The experience gained over the past forty years and the use of aerial photography are applicable to the use of satellite imagery. A major advantage of the satellite imagery is the synoptic view which facilitates the study of the "forest" without being blinded by the "trees."

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To many, including OMB, the expanded use of the reconnaissance imagery represents a significant cost savings. The rationale for this is twofold. First, since the satellite is in operation for intelligence purposes, it doesn't cost "any" more to collect imagery for the other uses and second, the cost of a comparable civil program just to separate those activities from the intelligence operation is prohibitive. A "one-truck, two-payload" approach is recommended as a cost-saver.

The DCI has expressed two particular areas of concern with respect to civil applications of satellite imagery. Security of the NRP and protection of the technology of the NRP must be maintained. Therefore, the ability of the NRP to meet the broadened requirements of the civil agencies while continuing to fulfill the requirements of the intelligence community with satellites must be carefully considered.

The role of the NPIC in the "peaceful uses" and "economic" areas should be to develop the capability to exploit imagery for all purposes especially those which have been or most probably will be identified by Mr. Colby as Key Intelligence Questions. NPIC should also make these techniques known to cleared personnel in the civil agencies which have responsibility for similar domestic or foreign "non-intelligence" programs.

  
Lt. Colonel, USA  
Deputy Chief  
Planning Staff, NPIC

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