

BYEMAN
CONTROL SYSTEM
GAMBIT
CORONA

~~ISI~~ NATIONAL RECONNAISSANCE OFFICE
WASHINGTON, D.C.



OFFICE OF THE DIRECTOR

June 18, 1968

MEMORANDUM FOR THE DEPUTY SECRETARY OF DEFENSE
SUBJECT: Target-Oriented Display (TOD)

This is in response to your memorandum of May 27, 1968 on the above subject. In accordance with your direction, we will attempt to provide the data required by OSD-SA for continuation of the TOD within the DOD. However, I feel constrained to point out that there are numerous possible pitfalls involved in casting the NRP, and particularly the satellite programs, in this format if meaningful conclusions are to be drawn from the aggregated data.

There is, of course, a basic weakness in the TOD approach in that it measures resource input but not intelligence output. Therefore, it does not permit evaluation of the relative merits of the programs it includes; it deals only with the distribution of intelligence collection and exploitation resources by geographic area. While this basis for categorizing intelligence programs may have a certain value for programs in which fixed ground installations essentially determine the intelligence targets, it has limited applicability to the overhead reconnaissance programs comprising the NRP.

Up to this time no recurrent requirements outside the Soviet Bloc and China have been established which have any significant effect on the annual number of satellite launches programmed in the NRP.

The reasons for this seemingly paradoxical state of affairs with respect to GAMBIT are that the laws of orbital mechanics and the facts of geography give this satellite system reasonably good access to other areas of interest over the surface of the earth when it is pro-

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grammed for near-optimum coverage of the Soviet Bloc and China; and second, that the capability of the GAMBIT system to cover targets in a given area along its track is limited by access time and the response time for roll angle change and not by the amount of film carried, thus, for example, making it possible to cover targets in the Middle East without any appreciable effect on coverage of China and the Soviet Bloc.

Search systems, such as CORONA, are somewhat more dependent on total film carried, but different weather factors as between, say South China and the Middle East, are such that, often, coverage of a high priority requirement in the Middle East will not substantially reduce coverage of high priority targets in South China, but may take away instead from the film available for lower priority targets in Africa which would otherwise be covered when South China and other Soviet Bloc area cloud cover make unprofitable the use of film in those higher priority areas. Photographic satellites are thus much more flexible in the choice of geographical areas for coverage than any other intelligence collection system of comparable applicability. Changes in targets and area coverage can be and are made even while the satellites are in orbit; these changes are in response to current intelligence situations as defined by the USIB-COMIREX. Allocation of photographic satellite resources to areas outside the Soviet Bloc and China, as reflected in the TOD, is based on the targeting requirements given to the NRO, but does not really indicate changes in emphasis between these areas and the Soviet Bloc and/or China.

The observations regarding targetable resources made by Dr. [redacted] in his memorandum to you of May 16, 1968 on the TOD, illustrate the lack of applicability of this format to making detailed resource allocation judgments regarding the NRP. These observations (paraphrased) and the relevant factors concerning the NRP are as follows:

1. Since there is an increased intelligence effort on South China which is in support of the war in Vietnam, there is actually a decrease in programmed resources for China's other activities. As indicated above, for satellites which constitute the largest faction of NRP resources, no such relationship between South China and other areas of China exists. In fact, if South China requirements became demanding

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as to call for additional satellite launches, the coverage of the rest of China would be improved, not diminished.

2. FY-68 Near East Resources are almost twice those of FY-67 and this increase is entirely in satellite photography. This statement is true, but for the reasons given above, has little, if any, resource implications. Basic satellite launch schedules are determined by Soviet Bloc and Chinese coverage requirements.

3. TOD findings accurately reflect our current emphasis on the strategic defensive forces of the USSR but they also show a growth in our overall intelligence effort on the USSR. Our Soviet Intelligence Program is large enough that it appears that shifts in emphasis should be accompanied by re-evaluation of the entire program, rather than add-ons to existing levels. Because offensive and defensive systems in the USSR are for the most part found in different geographical areas, satellite photography of the Soviet defensive forces does not substantially detract from our capability to cover Soviet (and Chinese) offensive forces. Therefore, this observation has little meaning for allocation of NRP photographic satellite resources. It could be interpreted to mean that photographic satellite launches should be reduced in order to offset the costs of SIGINT satellites employed to intercept defensive system radar signals. However, photographic coverage of defensive systems is at least equally important as SIGINT coverage. In fact, of course, the photographic coverage is important for a wide range of intelligence targets not only in the Soviet Union but elsewhere. Therefore, there is no reasonable way within the NRP to offset increased satellite coverage of Soviet defensive forces by decreased coverage of other major Soviet intelligence objectives.

4. The decrease in resources on Soviet Ground Forces is surprising, since our continuing studies of NATO policies and force needs have placed heavy emphasis on Soviet General Purpose Forces and a recent study indicated the poor state of our knowledge of these forces. As far as the NRP is concerned, there has been a substantial increase in photographic satellite capability to obtain intelligence data on Soviet and Chinese ground forces, although this is not discernible in the TOD format. The advent of GAMBIT-3 with its steadily improving photographic resolution has, for the first time, made it possible to acquire specific data on some deployed

ground force equipments such as vehicles, artillery, missiles, etc. These capabilities have made it possible in the last year to substantially advance our knowledge concerning Soviet ground forces. The frequency and degree of coverage of Soviet ground force units by high resolution satellite photography is dependent on the priority relative to Soviet strategic intelligence targets since there is considerable geographical overlap of these forces and targets. However, fewer photographs of sufficient resolution to identify the type and levels of major items of equipment of deployed ground forces may provide much more useful intelligence than more photographs of grosser resolution.

In summary, the TOD format does not provide a very meaningful or useful basis for making resource allocation judgments in the NRP, particularly with regard to satellite systems. Further, when the NRP is aggregated with the CIP and CCP in TOD summaries, the meaningful conclusions which might otherwise be drawn with respect to geographical allocations of resources in the CIP and CCP, may be obscured because the relatively large resources included in the NRP will tend to weight the totals heavily. To get any useful evaluations of the CCP and CIP from the TOD analyses, the best approach would seem to be to collect total resources in programs other than the NRP by geographical area to the extent appropriate (although NRP aircraft programs can also be allocated by geographical area to some degree) and to use NRP satellite geographical area attributions only for comparison. The NRP data should be kept compartmented from a security standpoint.

It should also be observed that the NRP resources included in the TOD do not correspond to the program/budget figures usually identified with the NRP or the program subject to review by the Executive Committee of the NRP. The TOD figures include the MOL program funds and some part of the SR-71 program funds. This could cause some confusion. It is suggested that these items be identified differently in the TOD by some title such as "Other Covert Overhead Reconnaissance."

Finally, I note that it is now intended to extend the TOD to include tactical intelligence systems, an area far removed from most of the NRP. I strongly recommend that papers dealing with this area not in-

clude any information on or reference to the NRP. Otherwise a considerable expansion of BYEMAN access clearances will be required to accommodate large numbers of DOD personnel concerned with tactical reconnaissance and intelligence who do not have and do not need BYEMAN clearances.

I again reiterate the recommendation in my memorandum to you of June 5, 1968, subject: "Secretary of Defense Guidance Memorandum (DGM) on Communications and Intelligence" that the NRP not be included in any standard widely-distributed DOD documentation formats such as DPM's or DGM's. Such handling of the NRP is inconsistent with the security requirements of the NRP, contradicts established DOD policies for the NRO, and is incompatible with the interagency character of the program and the agreed management arrangements as reflected in the DOD/CIA Agreement on the NRP of August 11, 1965. If some real benefits in the evaluation of the NRP or its management could be shown to result from a DPM/DGM-type treatment, there might be some reason to accommodate to a degree of relaxation of security and some additional management complications. However, no such benefits are apparent. In fact, as indicated in the present memorandum, the aggregated treatment of things which are unlike and incommensurable, as in the TOD, is not a useful or meaningful contribution to evaluation or management.

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