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DEPARTMENT OF THE AIR FORCE  
WASHINGTON

CORONA

OFFICE OF THE SECRETARY

April 22, 1966

MEMORANDUM FOR THE NRP EXECUTIVE COMMITTEE

SUBJECT: CORONA Management

A problem of long standing in the NRO has been CORONA management. Although there appear to have been several attempts to resolve the problem of defining a set of management responsibilities acceptable to all parties in 1964 and 1965, none of these were successful in arriving at an agreed-upon solution.

The August 11, 1965 Agreement for the Reorganization of the National Reconnaissance Program (1965 NRP Agreement) provides general and specific guidelines for the management of NRP systems which constitute an authoritative basis for dealing with the CORONA problems. However, the need to avoid unnecessarily perturbing certain established practices and responsibilities now being exercised in the on-going CORONA program must also be recognized. Having taken both these factors into account, I now wish to recommend specific assignments of management responsibility and related program actions as described in this memorandum.

THE PROBLEM:

I have reviewed the available background on the CORONA management situation. There are several particular problems, all of which stem from the lack of clearly established and/or agreed-to management responsibilities and relationships. From my point of view the most serious problems are as follows:

1. Other than myself, there is no single person or NRP participant accepted by all concerned as clearly responsible for overall system engineering, definition and specifications, integration, a master project plan, overall system facilities, integrated funding requirements, and on-orbit operations.
2. Since mid-1954, LMSC has worked without benefit of signed contracts in two areas: (a) overall systems integration;

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and (b) the qualification, test, and integration of an Improved Stellar-Index Camera (ISIC). (The latter task is essentially complete; the former is continuing).

3. The final phase of the CORONA Improvement Program has been extended somewhat because authorization has not yet been given to contract for all elements (specifically: integration of a modified ISIC--called the DISIC; internal modifications to the RV; and fabrication of larger diameter camera payload shells).

DISCUSSION:

The next several paragraphs provide a brief discussion of the problems cited above.

There were, in the past, and are, at present, widely divergent opinions on the necessity for a single CORONA Project Director in the field (on the premise that the program has been operating quite successfully for some time without anyone who was generally accepted as such). In my opinion, there is a need for a project director in any case and this need will be increased by planned actions in the CORONA program.

Up until this Summer, when the first THORAD booster/longer-life AGENA combination is launched, the NRO will have been operating, for more than two years, a mature system in which only relative minor changes have taken place. When the CORONA Improvement Program is completed in mid-1967, however, the system will feature a modified booster, modified AGENA, modified command system, new stellar-index camera, modified main cameras, and a new payload assembly structure. Implicit in these changes is the need for assigning responsibility to a single person for overall system engineering and integration as well as for definition of interface specifications.

In view of the above, I believe it is essential to have a single Project Director in the field (with proper definition, of course, of his responsibilities and authority in view of the joint-agency nature of the CORONA Project).

With regard to the two unsigned LMSC contracts, this situation apparently evolved because of the lack of well-defined technical and management responsibilities. For the same reason there has been an unresolved question as to whether SAFSP or CIA-CSP should hold the contract for the qualification testing and

integration of the DISIC in the new, larger diameter payload assembly structure (this work has not yet started).

I understand LMSC has expended Corporate funds in the amount of approximately [REDACTED] since July 1964 on overall system integration matters and qualification testing/integration engineering on the ISIC. At about the time this latter task was essentially complete, a decision was made to use the DISIC in lieu of the ISIC. LMSC is awaiting uniform guidance from the government as to the approved contracting agency for the several tasks involved and as to the scope of the contracts. The solution to this problem will be straight-forward under the management assignments which I propose--namely, SAFSP or CIA-OSP will sign the pending contracts for the period from 1964 to the present date, and will, in accordance with assigned responsibilities, negotiate new contracts (or amend existing ones) for the work from this date forward.

Last, with regard to the deferral of authority to proceed on the remaining elements of the CORONA Improvement Program. These were not released when CORONA Improvement Program was originally approved. The deferred items were not pacing at that time and it was apparently expected the then imminent new NRP Agreement would provide more specific guidance on the assignment of CORONA responsibilities. Recently, to preclude further delay, I authorized CIA-OSP to contract with LMSC to initiate design engineering on the larger-diameter payload assembly structure.

#### MANAGEMENT ARRANGEMENTS:

In developing these proposed arrangements, a guiding principle has been that no serious consideration would be given to any management plan and/or rearrangement of responsibilities which would unduly disrupt the on-going program. Further, to the extent possible, the solutions were to be in accord with the specifics, as well as the spirit and intent, of the 1965 NRP Agreement. I believe that my proposed assignments of responsibility and related management actions are fully responsive to these criteria.

At present, CIA is clearly responsible to the DNRO for procurement of the KH-4 and SI cameras (the latter to be replaced by the DISIC), the RV's, the payload assembly structure, and the engineering integration of these elements into a Payload Sub-Assembly and

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their test, operation and activities of the LMSC-AP facility, software support of the Satellite Operations Center before, during, and after missions, operation of the payload sub-assembly on-orbit, and diagnostic services. I recommend that these responsibilities continue essentially unchanged, with CIA assuming responsibility for integration of the DISIC, and the engineering, fabrication, qualification and production of the larger-diameter payload assembly structure.

SAFSP, on the other hand, is responsible for the boosters, the AGENA spacecraft, procurement of the DISIC, overall system integration in preparation for launch, launch services, on-orbit command and control, and recovery of the film capsules. I recommend that these responsibilities remain essentially unchanged. However, if a new RV or major modification to the present RV is ever undertaken (this excludes minor internal modifications to the present RV, peculiar to the CORONA cameras), I propose to assign this responsibility to SAFSP in line with the 1965 NRP Agreement and to insure maximum standardization among all RV's utilized in the NRP.

Additionally, I propose to designate the Director, SAFSP, as the overall CORONA System Project Director (SPD). The rationale for this assignment is that SAFSP is the NRO element best suited in terms of personnel, facilities, operational resources, experience and technical competence necessary to undertake this task. For example, under existing DOD arrangements wherein the Air Force assigns space elements either wholly to NRO (as in the case of the Space Systems Division's launch, on-orbit command and control facilities and capsule recovery forces), the Director, SAFSP is the only individual in the field who has the authority to direct all elements involved in the operation from launch through capsule recovery. As SPD, the Director, SAFSP, will be responsible to me for overall system engineering and integration (including master system specifications); overall system master planning, programming, and budgeting; preparation of the system for launch; launch activities; mission operations; and capsule recoveries.

In this arrangement, the CORONA System Project Director (SPD) responsibilities will not include sub-system engineering, technical direction, or contract supervision for the Payload Sub-Assembly; the CIA will be responsible to the DNRO for these functions with respect to the Payload Sub-Assembly. The following discussion of the management relationships is intended to clarify the division of responsibilities:

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1. The SPD as the Project Director will serve as overall system engineer having the responsibilities stated above. As such he will be responsible for all sub-system interfaces. In such matters, the Payload Sub-Assembly Project Office is expected to be responsive to appropriate direction from the SPD. However, the SPD, in the exercise of his interface responsibility, will give special consideration to the basic environmental requirements of the payload sub-assembly as established in consultation with the CIA.

2. On the other hand, the SPD is not expected to accomplish engineering (unless assistance is solicited) on technical matters pertaining solely to the payload sub-assembly. SPD actions elsewhere in the system affecting interfaces with the Payload Sub-Assembly do require the concurrence of that Project Office. Similarly, any Payload Sub-Assembly Project Office actions which affect interfaces with other elements of the system do require the concurrence of the SPD.

3. The SPD is responsible for master planning, master programming, and overall budgeting; however, he is not authorized to alter program or budget estimates of the Payload Sub-Assembly Project Office. Conversely, the latter is expected to program and budget in accordance with the master schedules issued by the SPD. (Note: CIA-OSP will submit budget estimates in the normal manner direct to the DXRO; however, the SPD will also include payload sub-assembly schedules and budget estimates in the System Project Plan for information purposes).

The most significant area of SAFSP/CIA-OSP relationship is that pertaining to interface between the sensor sub-system and other system elements. I cannot emphasize too strongly the need for close daily rapport between the respective offices. Representatives of both offices are expected to attend all meetings on subjects having a possible interface impact. The SPD and Payload Sub-Assembly Project Office are expected to have free and full access to all information and data pertaining to the system. This includes, as appropriate, access to contractor plants, engineering staffs and test facilities. However, supervision and technical direction of the contractor's activities will be solely by CIA-OSP for all elements of the Payload Sub-Assembly and by SAFSP for other system elements. If either SAFSP or CIA-OSP infers a possible interface action pertaining to any action of the other,

he is expected to so advise the other without delay. When a possible problem of this nature is raised, it is to be resolved without delay (if resolution in the field is not possible, the matter will be brought to the attention of the DNRO for decision).

The SPD will operate a CORONA Operations Command Post at the Satellite Test Center, Sunnyvale, continuously during a mission. The Payload Sub-Assembly Project Office will station appropriate Project Office and contractor representatives there as well as at the LMSC-AP facility during missions. The Satellite Operations Center in the Pentagon will deal principally and directly with the CORONA Command Post and the LMSC-AP facility, as appropriate, during a mission.

The SPD is the final field authority during a mission operation from launch through recovery. The SPD is expected, in normal situations, to assign responsibility to the senior Payload Sub-Assembly Project Office representative on matters of payload sub-assembly readiness, on-orbit operation, analysis of technical difficulties, etc. The senior Payload Sub-Assembly Project Office representative, in turn, will provide Payload Sub-Assembly status reporting on an agreed-on regular basis or upon request of the SPD. However, when there are differences of opinion in the case of technical difficulties, and when in the judgment of the SPD that mission failure may be imminent, the operational decisions of the SPD shall always be overriding and final.

Both the SPD and Payload Sub-Assembly Project Office will be authorized to grant CORONA clearances to properly clearable persons under their jurisdiction, in accordance with established ~~1102~~ security policies. The SPD and PS-APO shall honor, without question, a need-to-know determination on the part of the other. Each shall keep the other advised on a continuing basis of current project access lists.

The SPD will utilize the services of Aerospace Corporation in a general systems engineering role. Aerospace Corporation employees supporting the SPO shall have free access to information and data at the payload sub-assembly contractor(s), but shall exercise no technical influence or judgments over matters internal to the Payload Sub-Assembly, and shall not be charged by the SPD with advising him on such matters.

Despite good intentions on the part of both SAFSP and CIA-OSP, I am sure there will be honest differences of opinion in interpretation of management responsibilities, whether or not a problem really has interface implications, etc. When such instances arise and cannot be settled in the field, the matter will be called to my attention and promptly resolved.

RECOMMENDATIONS:

With your concurrence, I will take the following actions:

1. Issue suitable management directives to SAFSP and CIA in accord with the preceding sections of this memorandum.
2. Direct CIA to sign the ISIC integration contract with IMSC from inception through completion so that IMSC may bill the Government for services already accomplished.
3. Direct CIA to negotiate a new contract (or amend an existing one) with IMSC for qualification testing and integration of the DISIC into the Payload Sub-assembly.
4. Direct CIA to amend the Payload Sub-assembly contracts such that appropriate personnel of SAFSP and the [REDACTED] may have free access to data and information.
5. Direct SAFSP to sign the system integration contract with IMSC from July 1964 through the current date so that IMSC may bill the Government for services already accomplished.
6. Direct SAFSP to negotiate a new contract with IMSC for system integration reflecting the assignments of responsibility described herein (the proposed work statement will be coordinated with CIA and approved by me prior to contract execution).
7. Authorize CIA to negotiate new contracts (or amend existing ones) for work on the remaining elements of the CORONA Improvement Program.

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Alexander H. Flax  
Director  
National Reconnaissance Office