MR VANCE HAS SEEN

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Dep Sec Def

If you have not seen a quick glance (even if limited to the "present management" and "proposed" charts) is worth while.

Gene

Pse return to Mr. McMillan

Eugene G. Fubini

~~TOP SECRET~~

DEPARTMENT OF THE AIR FORCE
WASHINGTON

OFFICE OF THE UNDER SECRETARY

January 28, 1964

MEMORANDUM FOR THE SECRETARY OF DEFENSE

SUBJECT: Management of the CORONA Project

Introduction

During my tour to date as DNRO, I have felt that the CORONA project presented me with two major problems: first, a degree of operational unreliability which, while not crippling, has been serious and, in my judgment, correctable; and second, a separation of management responsibilities within the NRO between two of the principal Program Directors. I have tended to charge off operational faults and failures mostly to the central contractor, Lockheed Missiles and Space Company (LMSC), and have several times engaged in informal technical audits of this contractor's activities. The divided management I have tended to regard primarily as an inconvenience to me, mostly because it has obliged me to make explicit and careful divisions of responsibility every time even a minor non-routine matter has come up. I have, as you know, been discussing with the Director of Central Intelligence, so far without success, a proposal to eliminate the split in management.

In pursuing solutions to these two problems, I have concluded that they are indeed the same problem. More precisely, they are respectively operational and structural demonstrations of the fact that the Government's management of this project is unconscionably weak and diffuse. I am furthermore convinced that under more effective management this project will demonstrate significantly higher reliability and better technical performance, and that this can be accomplished with a real reduction in costs.

This memorandum sketches the management relations that now prevail on the project, emphasizing the more striking features.

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In brief, seven of the major contracts that govern the project are dispersed among four separate elements of the NRO, there is no defined responsibility for engineering of the whole system, and what engineering control there is is vested in a committee most of whose members have no other significant line responsibility in the project.

The memorandum goes on to summarize some obvious conclusions and to offer some judgments I have formed from recent interviews with the principals in the offices involved. A management arrangement is proposed that I think should be our goal. With your approval, I shall continue to seek with the DCI an arrangement that embodies the essential features of this proposal. Since such discussions are likely to take some time, I feel that certain interim steps must be taken, meanwhile, to get the project under better control. These also are discussed.

Current Management

The present management structure for the CORONA system follows closely the physical structure of the hardware, to a greater degree than it follows the functional structure of the operation. The major elements of the hardware are:

THOR booster, supplied by Douglas Aircraft,

AGENA-D spacecraft, supplied by Lockheed,

Project-peculiar and mission-peculiar modifications of the AGENA-D, accomplished by Lockheed,

Payload (P/L), principally supplied by ITEK,

Re-entry vehicle (R/V), supplied by General Electric,

Structure to integrate P/L and R/V with the AGENA-D, supplied by Lockheed.

Many items minor in cost but critical to the system - e.g. film - will not be covered here. Only certain functions will be examined, mostly ones which cut across hardware or organizational interfaces. On-orbit, recover, and post-flight functions will not be discussed. These are also very complex.

Chart I shows in gross terms the management structure at issue, including the formal channels for administrative direction, technical direction, operational direction, and hardware flow. For shock value, more detail is displayed than will be discussed. Attachment 2 gives details about the principal organizational units that appear on this Chart, noting their major responsibilities. The next few paragraphs cover the features of the organization that need emphasis.

Contracts for engineering, fabrication, and delivery to the Government of the major payload element, the re-entry vehicle, and their integrating substructure, are held by a CIA contracting officer (C/O) who resides at Langley, Virginia, and reports up through the NRO Program B (CIA) channels. These contracts cite SAFSP, through the 162 Office noted on the Chart, as the source of technical direction, "acting as the agent for all interested agencies of the Government."

Contracts for some minor payload elements, not shown, and for the systems engineering that Lockheed Missiles and Space Company (LMSC) does to integrate the payload, re-entry vehicle, substructure, and launch procedures, are held by a CIA contracting officer who is detailed to SAFSP, El Segundo, California, and responds to SAFSP administrative direction. The systems engineering (SE) contract also cites SAFSP, through the 162 Office, as the source of technical direction.

The contract with LMSC for adaptation of the AGENA-D to the CORONA mission is held by the 162 Office. This office reports directly but covertly to SAFSP. This particular contract will be called the LMSC 162 contract.

Two other LMSC contracts are held by the Booster Support Office in Space Systems Division. These cover respectively (1) procurement of the standard AGENA-D and (2) all LMSC launch services at Vandenberg Air Force Base (VAFB). Therefore, LMSC has five separate contracts critical to this program, held by at least four different contracting officers in four different parts of the NRO. Responsibility for all five unites only in my office. The actual confusion at LMSC is not as great as this organizational confusion could create; this will be explained below.

As noted, technical direction for the P/L, R/V, and substructure, and related systems engineering, comes from the 162 Office. A document incorporated into all applicable contracts by reference establishes procedures for approving technical direction which seriously dilute the personal responsibility of SAFSP or his 162 Program Director in this regard. By these procedures, technical direction is binding on the affected contractors and contracting officers only if it is unanimously approved by a committee called the Configuration Control Board (CCB). Furthermore, the contracting officer is allowed discretion to reject technical directives from the CCB that induce contract changes which exceed the funds approved to him. This latter has not so far created a problem, although in principle it could since, in some cases, funds are approved through administrative channels that are completely separate. The CCB is chaired by an officer from the 162 Office, and manned by representatives of SAFSP, NRO Staff, and NRO Program B; not more than two members of the CCB have any other direct line responsibilities in the project.

Internally to LMSC, the five critical contracts are treated with some unity. The 162 contract, the payload substructures contract, and the SE contract are all handled by an LMSC 162 Office which is supported by functional elements of LMSC. Part of this LMSC 162 organization operates in a covert facility, A/P. There is in this organization some systems engineering effort that reflects back on the AGENA-D.

Conclusions

From this outline of the organization, I conclude:

1. The only place in the present organization where the authority of a true project director can be exercised is in my office.

2. The channels now defined through which I must operate as project director are confused and unnecessarily tortuous.

3. There is no contractually defined responsibility for systems engineering of the whole system from booster through re-entry vehicle and of its operation from mission-definition to recovery.

In reviewing the practices and the attitudes of the people involved, I conclude also:

4. I have not up to this time exercised the functions of a project director in the continuous detail required of that office.

5. The project operates amiably on a "business as usual" basis but standards of efficiency and technical performance are low.

6. LMSC is better motivated and more unified than might be expected under the confused and permissive controls that are in effect, but both the quality and efficiency of their efforts need improving, and can be improved.

7. Everybody is busy, but they are principally engaged in engineering for and accommodating to changes and "improvements." There is in fact no conscious control over the configuration of the system. Despite the preoccupation with change, major correctable technical deficiencies remain in the system, and others are not even under study to determine their correctability.

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Recommended Organization

I take it as clearly established at this point that the management of the CORONA project must be simplified. Chart II shows fairly specifically the organization that I recommend. It puts the key elements of the project into a single office under SAFSP. This will be a covert office, under a strong director, replacing the present 162 Program Office. The latter was established at a time when [redacted] provided cover for CORONA by engaging in overt space experiments. No cover has been used since DoD Directive 5200.13 took effect, an[redacted]as been dropped [redacted] time is appropriate for such a change.

More basically, in proposing this structure, I considered the following features as being essential:

1. A focus for the management where one individual has sufficient authority that he can be held personally responsible for success of each operation, for technical performance, and for economical management.

2. Channels of communication and responsibility clearly defined and direct enough that operational, technical, and fiscal direction can be consistent with each other and unequivocal.

3. A clear point of contact with the Government for each contractor on the project so that (1) and (2) can apply also to each contractor's organization.

4. A contract structure that covers all elements of the system and its operation in a sufficiently comprehensive way.

5. Specific contractual provisions that enable the Government to control the amount and direction of engineering effort that goes into system changes.

6. Incentive contracts wherever possible with accent on performance.

The organization outlined in Chart II permits these features to be realized. In defining it, I considered that SAFUS/DNRO should not be the day-to-day project director for CORONA, so that all the authority needed for day-to-day operation must come to a focus at a lower echelon. Although in principle a new organization could be set up, in the CIA or the Air Force, to assume this authority, to my mind the only practicable alternatives involve regrouping under SAFSP the necessary elements of the SAFSP and SSD organizations. I cite four reasons: (1) Most of the authority already resides in this structure, albeit in a dispersed way. (2) All but four of the experienced people who presently have direct day-to-day responsibilities for managing or supervising parts of the project for the Government operate within this structure. (3) Some of the resources important to the CORONA project must be under the control of SAFSP for use on other projects. (4) SAFSP was set up for this purpose and there is no need to establish a parallel organization.

There remains some choice as to how closely the following elements are to be integrated into the SAFSP organization:

AGENA-D procurement and launch services,

THOR procurement and launch services,

The 6595th Aerospace Test Wing which conducts the detailed launch operations, and

The 6594th ATW which operates the Sunnyvale Satellite Test Center and its outlying tracking and command stations, and operates the recovery forces.

All of these elements are important to activities other than those under SAFSP, so there is a general argument in favor of retaining them in SSD, relieving SAFSP of an administrative burden and treating him as any other customer. In this case

of the THOR and the services of the 6595th, there appears to be no strong counter-argument; service to SAFSP has been good, and the interfaces have not been troublesome.

Interfaces with the AGENA-D and the 6594th are more complex, and have not been without their problems. Furthermore, SAFSP represents 75% of the world market for AGENA-D's, although only 30% go to CORONA, and buys over 90% of the services now provided by the 6594th. My present recommendation is to examine further the possible transfer of AGENA-D to SAFSP, although the Chart shows it as GFE to him, and to leave the 6594th in statu quo. One reason for the latter is that you have directed the Air Force to incorporate the services and facilities of the 6594th more closely into the national ranges.

Recommended Contracting and Policy

To realize the objectives toward which this proposal is directed, the new CORONA program office must have administrative control over contracts that cover all of the functions now under contract to the project from LMSC, ITEK, GE, and other associates. Other functions must be added. In addition, the contractual arrangements with LMSC can certainly be simplified.

I consider it above question that LMSC should continue to be the integrating contractor. I propose that the contract or contracts with LMSC include but not be limited to the following terms and general items of work:

a. Comprehensive systems engineering of the whole CORONA system and its operation, including the establishment of performance and reliability standards for all elements, and of test and launch procedures.

b. SAFSP will be the point of contact for the Government. Technical direction, including that arising from the systems engineering, will be approved and promulgated by SAFSP or by his designated representative.

c. Detailed engineering of the AGENA-D and of its program-peculiar modifications.

d. Detailed engineering of the substructure integrating AGENA, payload, and re-entry vehicle.

e. Fabrication and test of the modified AGENA-D and of the integrating substructure, and the integration thereof into the system.

f. It will be specified contractually that engineering efforts judged by the Government to be directed toward major changes in the system will not be permitted except by separate contract or contract change that is specific to the change in question.

In setting up these contracts, I will review all work statements before final negotiation. I believe that it will be possible to write contracts with LMSC in such a way that the bulk of the money will be put on incentive contracts in which fee will be determined by performance on orbit. This will certainly not be possible under the present diffuse structure. I believe further that the tight controls implied by items (b) and (f) will save more engineering effort than will be required to support the enlarged scope implied by (a), resulting in a net saving to the Government. There is no question in my mind that better technical performance will result.

My general operating policy will be to delegate responsibility to SAFSP for day-to-day CORONA operations in response to USIB requirements as transmitted to him from DNRO, holding him personally responsible for the success of each mission, and for the performance of all contractors. He would be authorized to make only such changes in the system as were in his judgment minor in scope and necessary under his responsibilities. In the exercise of this judgment he would be accountable to DNRO. Major changes in the system would not be undertaken without specific authorization from DNRO. He would be expected to recommend to DNRO any actions he felt were required for the

success of the system that were not within the scope of his assigned authority. He would be expected to set up, as Chart II suggests, such controls and inspections at contractor's plants as he felt necessary to the discharge of his responsibilities.

Initiating the Improvements

All the authority I need to bring about the situation just described is explicitly assigned to me by the NRO Agreement of 13 March 1963 (See attachment 1). As a first simple step in the direction of Chart II, I have already proposed transferring the CORONA contracts now held at Langley, Virginia, to a CIA contracting officer attached to SAFSP, so that they could be administered in the same way as the systems engineering contract now is. This proposal has not yet been approved by the DCI, and I am presently under injunction from him to maintain the status quo.

I am of course continuing to plan the details of a centralized management along the lines of Chart II. Most of the relevant contracts lapse with the fiscal year; if they are to be followed by well-negotiated but different ones, planning must soon be replaced by action. I propose to continue working in this direction.

Immediate Actions

Meanwhile, unfortunately, the program continues to flounder. I feel that I must personally assume close enough day-to-day control to stabilize the configuration in a sensible way and to establish clear-cut and meaningful priorities and engineering objectives. There is no question that I have the authority to do this; I bring the specific proposed actions to your attention for three reasons:

First, evidence from other actions I have recently taken suggests that the staff of the DCI may consider that any new actions are in violation of his request not to disturb the

status quo. I therefore expect to be discussing these proposals with the DCI as the time comes to put them into effect.

Second, should the President's Foreign Intelligence Advisory Board at their January 30 meeting quiz me, as they sometimes do, on my efforts to improve the record of CORONA performance, I would like to cite some specific actions.

Third, I would like to emphasize that I do not consider these steps as substitutes for the kind of basic clean-up of the CORONA management that I have proposed. They are a natural sequel to my recent review of the project, in my judgment urgently needed at the present time if I am properly to discharge my responsibilities.

The actions in question are:

1. Instruct the 162 Program Office via the covert channel through SAFSP that henceforth all technical directives, after approved by the CCB, will be reviewed by me before they are signed by the 162 Program Director and transmitted to the contracting officers and the contractors. This is an administrative step which can be taken without change to the procedures as they are defined by contract.

2. Direct the NRO Staff that I be kept informed, on a timely basis, by the NRO staff representative on the CCB, of all matters that come before the CCB. This action is entirely internal to my staff.

3. Establish monthly technical project reviews under my chairmanship. Responsibility for arranging the agenda will be retained within the NRO Staff.

4. Hold performance reviews under my chairmanship after each mission, to be attended by responsible representatives of all responsible offices and contractors, with agenda to be set up by the NRO Staff.

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Attachments
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Brockway McMillan
Director
National Reconnaissance Office

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cc: Deputy Secretary of Defense

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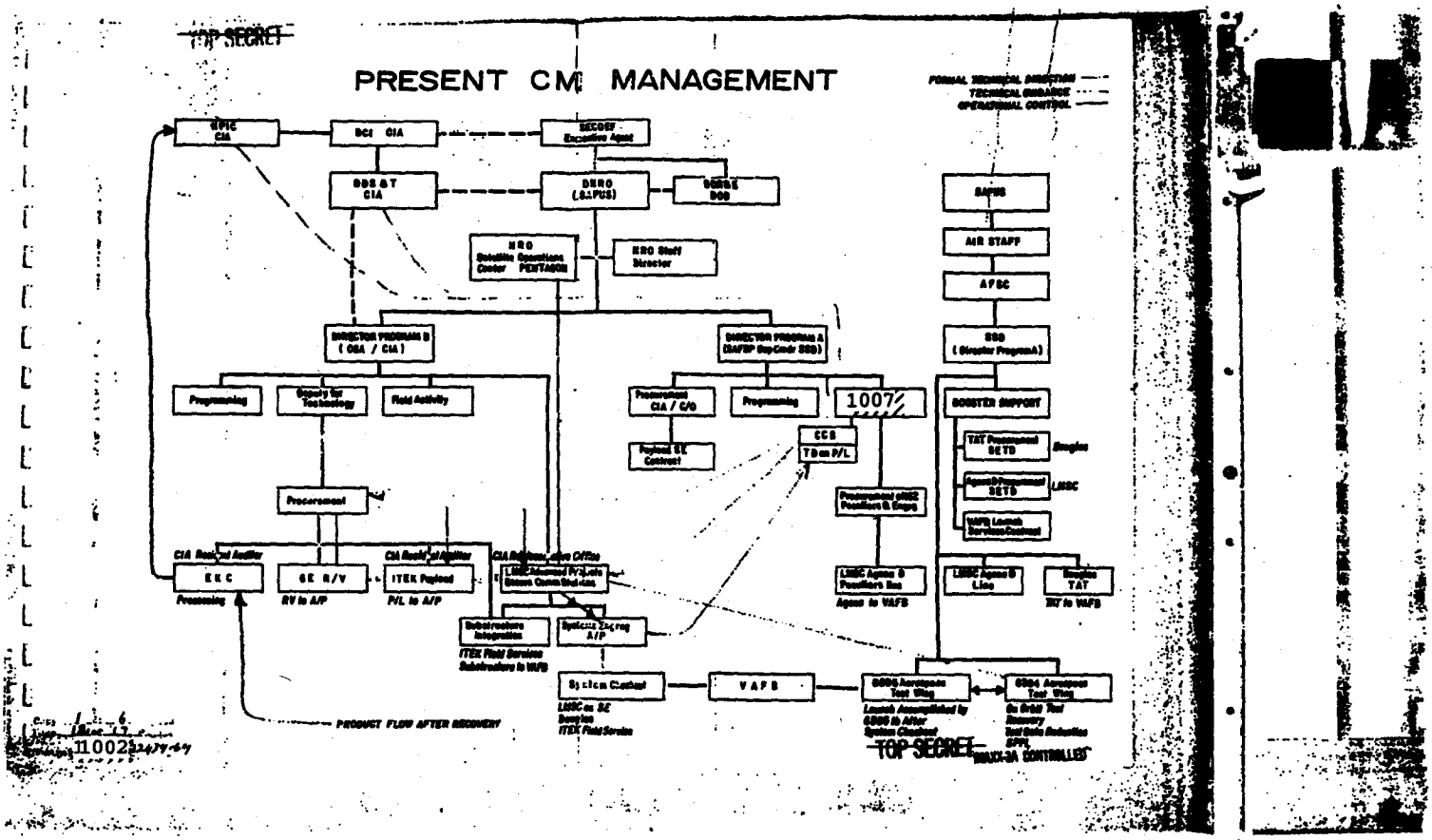
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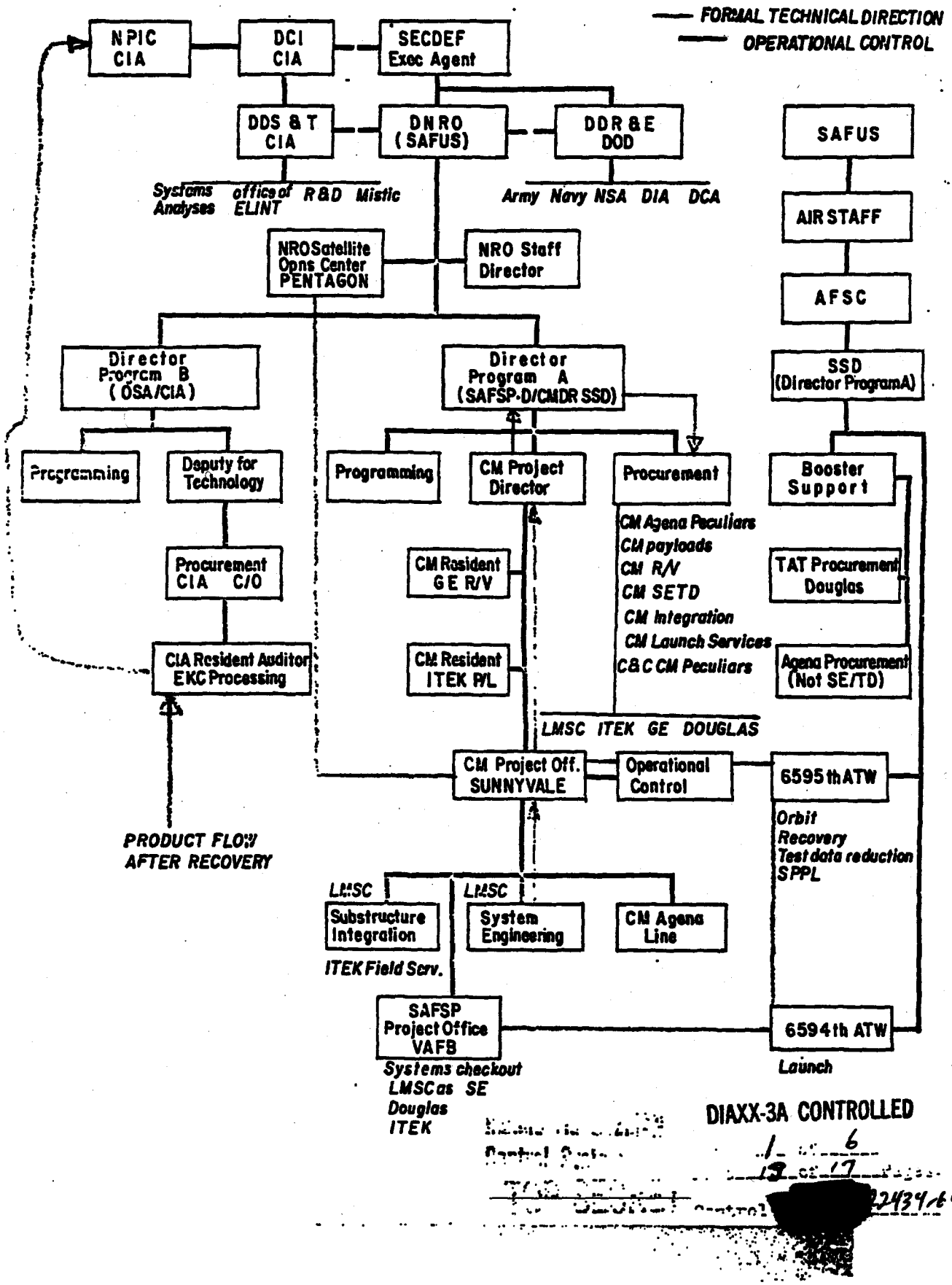
PROPOSED CM MANAGEMENT



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EXCERPT FROM MARCH 13, 1963 AGREEMENT

IV. Authorities

The Director, National Reconnaissance Office, in connection with his assigned responsibilities for the National Reconnaissance Program, shall be authorized to:

A. Organize, staff and supervise the National Reconnaissance Office.

B. Establish, manage and conduct the National Reconnaissance Program.

C. Assign all project tasks such as technical management, contracting, etc., to appropriate elements of the DoD and the CIA, changing such assignments, and taking any such steps he may determine necessary to the efficient management of the NRP.

D. Issue appropriate instructions and procedures implementing this agreement.

Attachment No. 1

MAJOR OFFICES INVOLVED IN CORONA

1. SAFSP (Secretary Air Force Special Projects). This is an office situated in the AF Space Systems Division (SSD) complex at El Segundo, California. It is headed by Major General Robert E. Greer, who reports directly to DNRO. Within the NRO, SAFSP is Director, Program A. He has a small staff who report directly to him, augmented by people detailed to him from SSD. He is Deputy Commander, SSD, for Satellite Systems, and exercises overt authority in this capacity over elements of SSD.

There is a CIA contracting officer detailed to SAFSP for handling certain CIA contracts in such a way that SAFSP effectively has administrative control over them. The particular contract of interest here is one with LMSC which provides for systems engineering integrating R/V, P/L, and structure with the modified AGENA-D. This is a rather central contract known as SE1928.

2. 162 Program Office. This is an office within SSD, first set up as a cover for the CORONA program. By written covert agreement with the Commander, SSD, SAFSP has direct control of this office; the relationship is covert. This office has responsibility for the modifications of the AGENA-D into its CORONA and mission-peculiar configuration. This modification is accomplished by LMSC under a contract that provides for engineering, fabrication, and test, and provides also for systems engineering to integrate the modified AGENA into the whole system, including integration of the launch pad and check-out procedures. This contract resides in a 162 project office in LMSC which is supported by many functional elements of LMSC.

3. AGENA-D Program Office. This is an office in SSD over which SAFSP has only the control implied by his Deputy Commander position in SSD. This office is responsible for procurement

of AGENA D's for all users. More specifically, the office assembles requirement forecasts from all users, including SAFSP, and forwards these and recommended procurement schedules through AFSC channels to Headquarters, USAF. Approved production rates and procurement policies are returned through channels, for implementation by the Office.

This Office administers, in the standard Air Force format, two major contracts with LMSC, one for fabrication, test, and delivery to the Government of AGENA D's, and the other for launch services to all users of these AGENAs, as well as launch services from LMSC which are peculiar to the CORONA system. The first-mentioned contract includes the engineering needed for quality assurance, for minor product improvements, and major system changes. No distinction is made contractually among these engineering elements, but the Office does exercise control over changes in the AGENA, and coordinates these with all users.

4. THOR Booster Office. This office is responsible for supplying THOR boosters, in a manner exactly analogous to that just described in connection with the AGENA D. The THOR booster is a key element of the CORONA system, but it is sufficiently mature and isolated from the rest that technical interfaces have not been a problem.

5. Director, NRO Program B. This is Colonel Jack Ledford of the CIA, who appears in that organization as head of the Office of Special Activities. This office is responsible for virtually all NRO activities in the CIA; it reports to the Director of Central Intelligence through the Deputy Director for Science and Technology, Dr. Wheelon, who is also the official monitor of the NRO for the DCI.

Under Colonel Ledford, and resident in Langley, Virginia, is a CIA contracting officer who handles several CORONA contracts. Two major ones are of interest here. One is with ITEK for engineering, fabrication, test, and launch services on the primary payload. The other relates to activities at a covert LMSC facility, the so-called Advanced Projects (A/P) facility near Sunnyvale.

Colonel Ledford has two representatives, a Colonel Murphy and his assistant, resident at A/P. Their defined duties are in connection with operational matters, but they do informally monitor the activities of the contractors at A/P.

LMSC is the principal contractor at A/P. Two contracts cover their efforts here; the one just mentioned, that is held in Program B, covers engineering, fabrication, and test of the substructure that carries the payload and reentry vehicle and unites them with the modified AGENA D, plus engineering and fabrication of the recovery system and of certain elements of the reentry system, plus check-out of the payload/recovery system exclusive of certain critical tests conducted by associate contractors.

The other LMSC activity at A/P is covered by the systems engineering contract SE1928, mentioned earlier. The principal payload contractor, ITEK, has a small contingent at A/P, as do other associates.