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INSPECTOR GENERAL'S SURVEY
OF THE
FOREIGN MISSILE AND SPACE ANALYSIS CENTER

December 1968

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INTRODUCTION

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I. INTRODUCTION

The Foreign Missile and Space Analysis Center (FMSAC) is a component of the Directorate of Science and Technology with broad responsibilities in the field of missile and space intelligence. Established in 1963, it now has a T/O of and an annual budget of close to \$4 million.

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During this survey we interviewed individually more than half of all FMSAC employees, spoke with senior officers in a number of other Agency components, visited the Secretariat of the United States Intelligence Board's Guided Missile and Astronautics Intelligence Committee in the Pentagon, and toured the Defense Special Missile and Astronautics Center at the National Security Agency. We did not visit any of the facilities of FMSAC contractors.

We find that the product of FMSAC enjoys a high reputation. Morale in the office runs for the most part from good to excellent; employees have a fine sense of participation in the total intelligence effort. Measured against the mission and functions of the office as understood in FMSAC, the staffing of the office is thin. Management in some respects struck us as rather loose, but we believe that the filling, near the end of our survey, of the position of Deputy Director of FMSAC will provide a needed corrective. We do offer for consideration several suggestions on office structure.

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Raised during this survey were a number of questions beyond the normal scope of a component inspection. Responsibility for missile and space intelligence is divided between offices within the Directorate of Science and Technology, and between that directorate and the Directorate of Intelligence. The picture is complicated by the lack of a clear and up-to-date charter for FMSAC. We offer several recommendations on these points.

The most serious criticisms we heard during this survey had to do with external contracts and with the Agency's use of advisory panels composed of outside experts. The contracts and panels, about which we have a number of misgivings, are discussed in some detail in the final section of this report.

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II. MISSION

Five years after the creation of FMSAC, there is still no Headquarters Regulation spelling out its mission. The lack of an up-to-date formal statement of missions and functions is felt not only in FMSAC, but also in other Agency components.

The missions and functions of FMSAC as currently understood by that office include:

- All-source analysis of foreign missile and space events.
- All-source analysis and evaluation of all foreign missile and space systems, except those missile systems which are defensive in nature.
- Presentation of evaluations to appropriate policy and planning levels of government.
- Provision of substantive support in the preparation of National Intelligence Estimates.
- Provision of administrative and substantive support to the United States Intelligence Board's Guided Missile and Astronautics Intelligence Committee (GMAIC).
- Establishment of requirements for, provision of guidance to, and evaluation of U.S. collection resources directed against foreign missile and space systems.

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The original purpose and scope of FMSAC was spelled out in Headquarters Notice 1-39, 7 November 1963, which established the office:

This organization will become the focal point for the complete analysis of all data on Soviet missile and space firings with particular attention to the analysis of all raw intelligence gathered from all sources and the reporting and dissemination of these studies to the pertinent components of the intelligence community. The Center is directed to utilize the best of our national capabilities, both private and governmental, to explore on a timely basis the extensive collection activities against these targets now in being under the directors of the various services. The Center will work in close coordination with GMAIC and will report its results to the USIB through GMAIC. The Center will also work closely with all collection agencies and is directed to develop judgments on the better utilization of our intelligence resources in this area.

In 1965 the "missions, functions, and analytical responsibilities of the Ballistic Missiles and Space Division of the Office of Scientific Intelligence and the Foreign Missile and Space Analysis Center" were "combined" (Headquarters Notice 1-61, 25 October 1965).

The move of the Ballistic Missile and Space Division (BMSD) brought to FMSAC increased responsibilities for offensive missile systems and space systems, but left in the Office of Scientific Intelligence (OSI) the Defensive Systems Division (DSD), which has responsibility for defensive missile systems (e.g., surface-to-air missiles, anti-ballistic missiles). This division between OSI and FMSAC of responsibility for defensive and offensive missile systems has resulted in a certain number of "gray areas" where spheres of responsibility overlap.

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This "gray areas" question and related problems, which will be better understood after FMSAC's structure and operations have been outlined, are taken up in some detail in Section IV.

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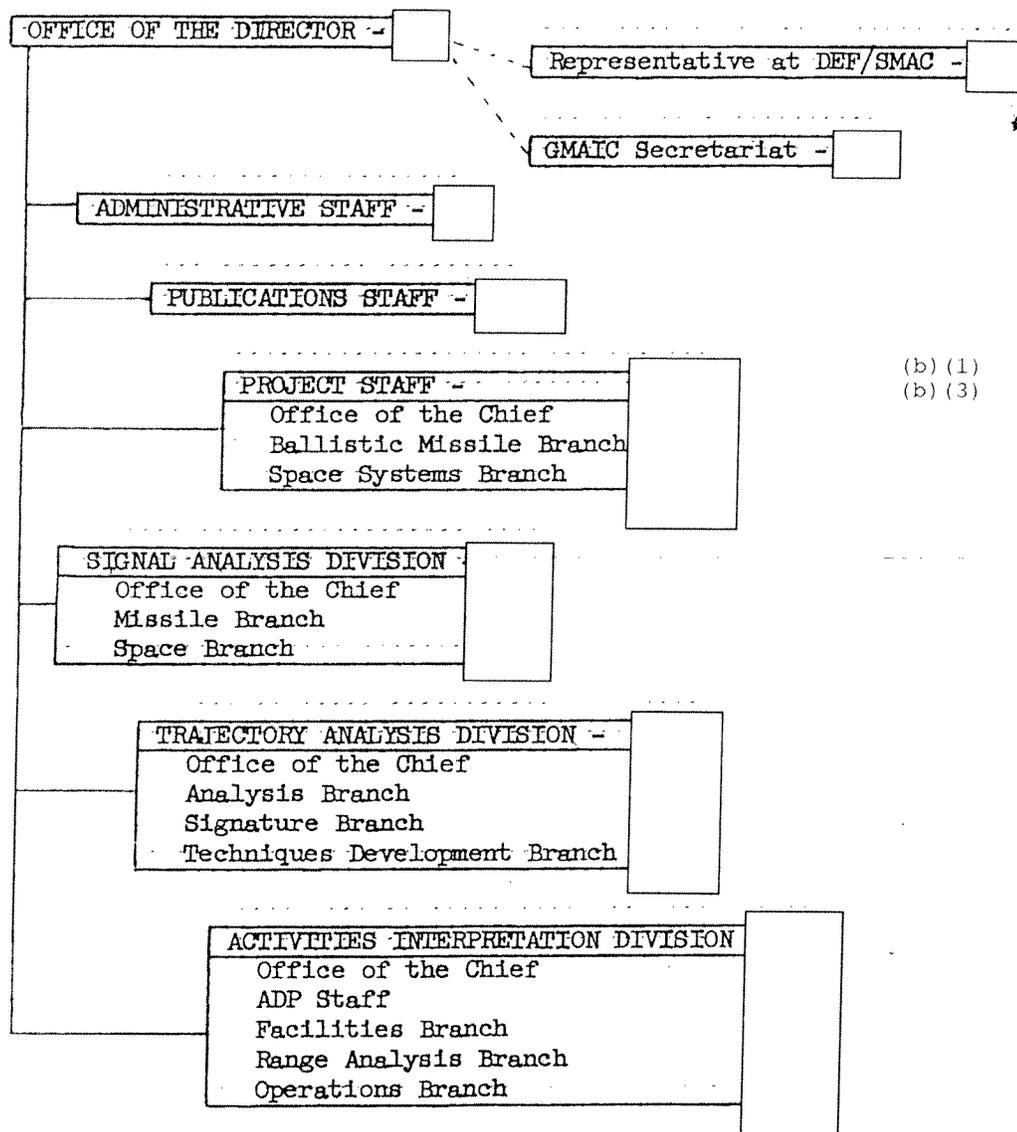
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ORGANIZATION AND
PRODUCTION

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ORGANIZATION AND FY 1969 STAFFING
FOREIGN MISSILE AND SPACE ANALYSIS CENTER



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III. ORGANIZATION AND PRODUCTION

In this section we describe and comment on the internal organization of FMSAC and the principal functions of individual components, and we review the intelligence production of the office.

Structure

The organization of FMSAC is as shown on the chart facing this page. As of 1 October 1968 the office had [] staff employees against an authorized T/O of [] Approved planning calls for an increase in personnel to [] in FY 1970; most of the projected increase is related to the [] (b) (1)
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Six of the present FMSAC positions are located outside headquarters. Two professionals and two clerical personnel are assigned full time to the GMAIC Secretariat in the Pentagon. One FMSAC professional is the Agency's representative to the Defense Special Missile and Astronautics Center (DEF/SMAC) at the National Security Agency. Finally, FMSAC has a security officer stationed in California to handle security matters in connection with contractors working for both FMSAC and OSI.

Working in FMSAC but not on that office's T/O are four personnel. One editor from OSI works full time in FMSAC, handling mainly the

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editing and coordination of Scientific and Technical Intelligence Reports. Two officers of the National Aeronautics and Space Administration have office space with the FMSAC Project Staff; while these officers are not fully integrated into the FMSAC structure, they do often contribute directly to FMSAC publications in addition to performing many routine liaison functions. Working full time as a member of the Signal Analysis Division is a telemetry expert whose services have been obtained under a contract with

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The front-office structure in FMSAC provides for a Director, a Deputy Director (this position, filled during the survey, had been vacant since mid-1966), an Executive Officer, an Action Officer, and two clerical employees. For all practical purposes, the Publications Staff and the Administrative Staff work under the direction of the Executive Officer. Reporting directly to the Director of FMSAC are the chief of the Project Staff and the chiefs of the three divisions.

The Administrative Staff consists of an administrative officer, a budget and fiscal officer, a records analyst, an administrative assistant, and an information control clerk. The security officer stationed in California belongs to this staff.

The Publications Staff consists of a GS-13 editor and a GS-6 editorial clerk. Also working here is the OSI editor referred to above. The work of this staff is discussed in further detail later in this section.

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The Project Staff, with a T/O of [] is responsible for in-depth analysis of foreign missile and space systems (except for foreign defensive missile systems). It relies heavily on contributions from other FMSAC components in putting together its studies. This staff prepares contributions to National Intelligence Estimates (which are provided to ONE directly as well as through GMATC channels) and prepares most of the office's output of Scientific and Technical Intelligence Reports. The staff has two branches, a Ballistic Missile Branch and a Space Systems Branch.

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The Signal Analysis Division (SAD), with a T/O of [] performs analysis of telemetry signals and other electronic emissions from foreign missiles and space vehicles. In addition to its support of intelligence production, it provides feedback to collection elements to assist in the evaluation of collection techniques. This division also works on the development of new techniques and computer programs for automatic manipulation and evaluation of radio telemetry data. The division has two branches, a Missile Branch and a Space Branch.

The Trajectory Analysis Division (TAD), with a T/O of [] is responsible for the determination of trajectories of ballistic missiles and orbits of space vehicles, and for analyzing the behavior of re-entry vehicles. It provides guidance to collection elements for the acquisition of raw intelligence data, develops new computer programs for the reduction and analysis of raw data, and evaluates

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panels and maps, and alerts other elements both in and outside FMSAC to significant developments. The Control Center is in frequent contact with the CIA Operations Center and often assists in the preparation of items for Office of Current Intelligence publications; it has secure telephone and teletype communications with DEF/SMAC; it

[REDACTED]

(for periods immediately prior to and during Soviet space and missile launches this communications linkage is tied directly into DEF/SMAC); and it has teletype communications capability with FMSAC contractors in California. Also located in the Control Center is FMSAC's CDC-1700 computer (used for "reading" all incoming wire traffic and selecting items of interest, for solving certain types of trajectory problems, and so forth) as well as IBM-2260 equipment for querying the OCS computers in which FMSAC has stored basic information on all past foreign missile and space events. The Control Center is manned at all times by at least two officers. Most of the personnel assigned to the Control Center are relatively young and of relatively junior grade; many are working while continuing their education.

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Adequacy of Structure

Given the scope of the FMSAC charter as presently understood, the office T/O is thin. We realize, of course, that FMSAC does not attempt to duplicate the extensive analytic work done in the missile and space field by larger work forces at, for example, the National

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Security Agency and the Foreign Technology Division (FTD) of U.S. Air Force Systems Command. FMSAC concentrates its in-depth analytic efforts on questions or areas of special significance or interest, or in areas where the results reported by others are deemed questionable. The office also relies on external contracts for much analytic work.

Nonetheless, some FMSAC officers frankly admit they have insufficient time and staffs to do, or to do adequately, what they understand they are charged with doing. One branch chief says his branch "doesn't even try" to fulfill its mission--all it can do is "chip at the top." The Range Analysis Branch has only one analyst working on Free World developments. At the time of our visit, the Space Systems Branch had only three professionals--clearly not enough to handle its charter responsibilities and give adequate attention to monitoring of contracts. The Space Branch "can't look at all space telemetry--some stuff never gets looked at."

Many FMSAC officers believe this situation is complicated by the present internal organizational structure of the office. Despite the generally cooperative atmosphere that prevails in FMSAC, there are "organizational barriers," whether real or imagined, to efficient operation. The ADP Staff and the Control Center are intended to serve all parts of FMSAC, and that is certainly the attitude in the Activities Interpretation Division; yet some personnel in other components of FMSAC refer to the computer in the Control Center as

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"belonging to AID," the implication being that it is not generally to be considered in their planning and work. Occasionally people in one staff or division are not aware of work undertaken in another part of the office until a "coordination draft" has been prepared, even though they have responsibilities in the field in question and should have been consulted at the outset.

The question of T/O adequacy is one which can only be considered in connection with a review of the mission of FMSAC and other components in the missile and space field. Elsewhere in this report we recommend such a review. Even now, however, we believe the FMSAC management might usefully consider some organizational realignment in order to improve utilization of assets on hand.

The Project Staff is less a staff than it is a line division. The work of the Facilities Branch and the Range Analysis Branch of the Activities Interpretation Division is akin to that of the Project Staff; we believe that integration of these branches and their functions into what is now the Project Staff could result in strengthening of present production units, permitting more manpower depth and back-up strength in individual components. The ADP Staff is not at present best located to serve all FMSAC components; while organizational position is not necessarily significant, the facts in this instance seem to be that structure is inhibiting maximum use and performance of that staff. If what is now the Activities

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Interpretation Division were to consist of essentially nothing but the Control Center and the ADP Staff, service to the total might be easier. It is also possible that the ADP Staff could function better if attached directly to the FMSAC front office.

The above suggestions are offered on a most tentative basis. All will need to be weighed against possible changes in mission and functions. Consideration will also have to be given to the likely impact on FMSAC of the planned Special Systems Operations Center which is to be established adjacent to, and in part integrated with, the FMSAC Control Center. (Plans for this new center are discussed in Section IV.)

Recommendation No. 1

That the Director of FMSAC review the structure of his office in the light of the discussion above, specifically considering renaming the Project Staff a division and integrating into it the Facilities Branch and the Range Analysis Branch of the present Activities Interpretation Division.

Intelligence Output

The principal intelligence publications of FMSAC are the Missile and Space Summary (MASS), Event Reports (ERs), and Scientific and Technical Intelligence Reports (STIRs). Each of these is described further below. FMSAC contributes a goodly percentage of the articles carried in two regular issuances of the Directorate of Science and Technology, the Surveyor and the Scientific Intelligence Digest. It

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also prepares some special memoranda and a few highly technical compilations. FMSAC is responsible for preparing--and this is a top-priority effort--contributions to National Intelligence Estimates which deal with space and strategic weapons. Contributions to the estimative process, made both in writing and in working-group participation, are provided both directly to ONE and through GMAIC channels.

Oral briefings and contractor reports are also part of the intelligence flow. The Director of FMSAC himself gives or participates in many high-level briefings and panel discussions. Reports submitted by FMSAC contractors are disseminated to other Agency and non-Agency components, and some of these are in fact intelligence reports.

FMSAC coordinates much of its intelligence production with other offices, especially OSI and OSR, and contributes to or assists in the intelligence production of other offices. Intelligence memoranda are at times produced jointly with other offices.

MASS, ERs, and STIRs

The Missile and Space Summary (MASS) is published each workday in two separate forms, a printed version and a cabled version. The printed version is put out early each workday morning and is disseminated only within headquarters. Offices we talked with described it as useful. It carries brief items of current intelligence interest in the missile and space field, lists document acquisitions, and includes

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"preliminary data sheets" on selected missile and space events. The first issue each month carries a summary of activities on all foreign ranges during the preceding month. The MASS is prepared in part during the day before issue by various FMSAC elements; additional items are prepared by the evening and night shifts in the Control Center.

The cabled version, which goes out around 1300 hours each day, is generally shorter than the printed version. Items used are brought up to date and revised as necessary before transmittal. Customers include the White House situation room, NASA, various USIB elements,



Event Reports (ERs--each published either as a Missile Event Report or as a Space Event Report) cover all significant data and information acquired on selected missile and space events. They are prepared only on events judged to be of special interest or significance. Separate inputs to each ER are prepared by the three FMSAC divisions; the FMSAC editor puts the parts together, edits the whole, and writes an introductory summary; the Director of FMSAC reviews the typed mats before printing. The number of ERs published in the first ten months of 1968 was 54; the total for all of 1967 was 126. Individual reports may run from 20 to 50 pages or more; considerable technical data are included, as well as graphics as appropriate. In many cases the acquisition and analysis of all pertinent data on an event may take months (NSA has a constant backlog in its preparation

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of telemetry analogs); although an ER may occasionally be published very shortly after the event being reported on, a time lag of six weeks to several months is normal, and the lag may even exceed a year. ERs are disseminated both inside the Agency and out. External recipients include USIB agencies, two contractors, [REDACTED]

[REDACTED]

Customer reaction to the ERs has been good. FMSAC last year sent questionnaires to all recipients. A high percentage replied, and almost all rated the ERs "valuable" or "very valuable," deemed the technical coverage "about right," and indicated that the selection of events for coverage was meeting their needs. The one point on which FMSAC did not score well was on "timeliness." As indicated above, the time lags are not all due to matters within FMSAC control; even so, FMSAC could improve its performance in cutting down the delays.

Scientific and Technical Intelligence Reports (STIRs) prepared by FMSAC cover in depth specific missile and space systems or related topics. The STIR format is used also for some joint efforts with other offices. In many cases the STIRs are the result of research and study undertaken in support of and in preparation for the office's contributions to National Intelligence Estimates. FMSAC produced 14 STIRs in the first ten months of 1968. The STIRs are edited by the OSI editor who works in FMSAC; after editing and coordination with other offices, the draft goes to the DD/S&T publications staff in OSI,

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which handles final preparation and sees to printing. We found that the time between delivery of text to OSI and actual dissemination averages about 55 days. STIRs receive both internal and external dissemination.

Production Weaknesses

FMSAC is not well organized to handle all its intelligence output. The FMSAC editor, supported by an editorial clerk/typist, handles the production of ERs and to the extent possible edits priority STIRs and other material when the OSI editor is out. When the FMSAC editor is on leave, his work merely piles up. The OSI editor who works in FMSAC edits STIRs and participates in office meetings to review Surveyor and Scientific Intelligence Digest articles and other material. The two editors are not a team or a staff, but rather each works pretty much separately from the other (though in the same cubicle). The MASS and some other FMSAC issuances do not go through the editors.

The assignment of an OSI editor to work full time in FMSAC dates from 1965 when BMSD/OSI was integrated with FMSAC. We believe that the slot for this position should be transferred to FMSAC. The Director of FMSAC and the Director of OSI have each indicated they believe that if the OSI editor in FMSAC retires (early retirement has been under consideration) the work he is doing could be done by a part-time editor. We note, however, that presentation of intelligence is a major function of FMSAC, and our review of FMSAC production convinces

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us that the office needs editorial strengthening, not weakening. In FMSAC as elsewhere in the technical world, the scientist and stylist are seldom the same.

Reference has been made above to delays and time lags in the publication of material prepared in FMSAC. A frequent complaint of FMSAC authors is that there is "no one in the front office responsible for production." As much as half a year can elapse between the time something has been approved for publication and the time the paper finally is published. Early this fall there was a backlog of 29 draft ERs.

We believe that both the quality and speed of FMSAC production could be improved if the work of the two editors were integrated, if one were appointed chief editor, and if to the extent possible (we exclude the MASS items produced at night) the production flow all went through the editors. Our review of some of the drafts submitted to editors by the FMSAC divisions also convinces us that more attention could well be given to establishing standards for manuscript preparation. We also believe there might usefully be more frank discussion of production problems at FMSAC staff meetings.

Recommendation No. 2

That the Deputy Director for Science and Technology

- a. transfer from OSI to FMSAC the slot of the OSI editor now working in FMSAC, and
- b. review the publications production system in OSI to see whether present production times can be cut.

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Recommendation No. 3

That the Director of FMSAC combine his editorial personnel into a single working group, name a chief editor, and bring this individual more completely into the total production flow.

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OTHER MANAGEMENT
FACTORS

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IV. OTHER MANAGEMENT FACTORS

In this section are discussed certain management factors affecting FMSAC as a whole--budget, personnel, computers, relations with other offices, and plans for a new Special Systems Operations Center. Advisory panels and FMSAC's contracts are discussed separately in Section V.

General

The most frequent comments we heard from FMSAC employees on internal management of the office had to do with the lack of a deputy director and a relative lack of supervision and direction. The deputy position, now filled, had been vacant since the present Director of FMSAC took over in mid-1966. The Director of FMSAC is of necessity frequently out of his office and tied up with high-level briefings and conferences; management decisions have often been delayed. We believe the appointment of a deputy will improve matters. We also believe, however, that the "looseness" of management has been due in part to the lack of a clear charter for the office, and hence of clear charters for the individual office components. Yet we would also note that, given the general quality of FMSAC personnel and the technical nature of their work, a somewhat loose management style would seem

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appropriate. Certainly most of the FMSAC personnel we spoke with have a fine sense of meaningful participation in the total intelligence effort.

Budget

The FMSAC budget for FY 1969 is \$3.943 million. Nearly 60% of this is for the external contracts discussed in Section V of this report. Nearly 37% of the budget total is for personnel compensation and benefits.

A major cost figure not included in the office budget is for use of computers in the Office of Computer Services. Of the total time logged on OCS computers in FY 1968, FMSAC accounted for 12% on the IBM 360/20, 2% on the IBM 360/50, and 16% on the IBM 360/65. If the equipment and manpower figures had been costed to FMSAC, the FY 1968 charges would have been close to \$800,000.

The current budget estimate for FY 1970 is \$4.069 million.

Personnel

Over half of all FMSAC employees have one or more academic degrees each, largely in technical fields. Morale, with very few exceptions, runs from good to excellent. We found no significant personnel problems which were not being adequately handled by management.

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The FMSAC career service board meets monthly. Two staff employees, the chief of the Administrative Staff and the budget and fiscal officer, are Support Services careerists. FMSAC maintains career cognizance of one telemetry expert [redacted] and will do so for the [redacted]

[redacted] Although the technical requirements of some positions make it difficult to find new qualified employees, FMSAC thus far has had no serious recruitment problem.

FMSAC has one student, a college freshman, participating in the program wherein individuals alternately work for three months and study for three months. FMSAC expects to bring several more students into this program.

On training for its staff employees, FMSAC follows a reasonably liberal and realistic policy. In the one-year period ending 1 September 1968, some [redacted] FMSAC employees participated in training. Most of the total of 74 orientation and training courses involved were short (e.g., the OTR-administered three-day ADP Orientation); a goodly percentage were of a technical nature, and about a third of the total were external courses. Two FMSAC employees took the Midcareer Executive Development Course. Seven employees took management and supervision training. Four participated in OTR's Writing Workshops.

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Computers

FMSAC's own computer equipment and its heavy use of OCS services have been referred to above. The office is alert to computer possibilities and reasonably aggressive in seeking new ways of solving problems. At the beginning of this survey FMSAC could use its IBM-2260 equipment to search machine files in OCS only during normal work hours; this capability has now been extended somewhat, and FMSAC has requested OCS to plan to provide this capability around the clock by June 1969.

FMSAC management is acutely aware that there can be a tendency to use machines simply because they are available. Computer time is expensive. The Director of FMSAC believes that so long as individual offices are not required to budget for computer usage there will be some temptation to use computers even for problems that ought to be solved on the back of an envelope. We share his view on the possibilities of abuse in this area. We are satisfied, however, with FMSAC's efforts to prevent such abuse.

Intra-Agency Relations

In general, FMSAC's relations with other Agency components are good. There is frequent and good communication between the directors of the various production offices. FMSAC sends its monthly schedule of production to the Office of Strategic Research (OSR) in the Directorate of Intelligence, and OSR provides FMSAC a copy of its research

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program; there are joint production efforts. FMSAC has a seat on the Intelligence Board which meets in OSI, and OSI sends a representative to the FMSAC production meetings. Earlier this year an Imagery Analysis Service officer spent several months working in FMSAC; this was mainly a training and orientation effort, but it has improved understanding and working relationships between the offices. The Office of Current Intelligence and the CIA Operations Center receive good support from FMSAC. FMSAC relations with the Information Requirements Staff (IRS) of the Directorate of Intelligence in the field of requirements are likewise good; while the key point in FMSAC for handling requirements is the Action Officer in the front office, there are frequent informal contacts between IRS and FMSAC analysts.

Not all, however, is smooth and efficient. Reference was made in Section II to "gray areas" between OSI and FMSAC. There are also "gray areas" between those two offices and OSR. Agency regulations are not up to date. As there is no regulation on FMSAC in the HR-1 series, so also there is none yet on the newer OSR. The existing regulations on OSI (HR 1-11f, 27 March 1964) and the office of the DD/S&T (HR 1-11a, 27 March 1964; this refers to FMSAC, though not by name) both antedate the integration of BMSD and FMSAC. The regulations picture is also cloudy in that HR 1-11a says the DD/S&T "is responsible for...the production of scientific and technical intelligence....," while HR 1-13a, revised 26 September 1966, says the DDI "is

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responsible for production and publication of finished substantive intelligence, other than National Intelligence Estimates or intelligence issuances of the Board or Office of National Estimates."

We recognize the impossibility and even undesirability of defining functions so as to eliminate all overlap. Nonetheless, we feel that present deficiencies in the HR-1 series are a handicap to efficient operation. It is our clear impression from talks with senior officials in the various offices that existing "understandings" on who is responsible for what vary somewhat between components.

We understand the concepts on which the present structure and division of responsibilities are based. OSI and FMSAC, for example, are responsible in their respective areas for foreign missile systems from the initial conception through research, development, testing, and engineering; OSR's intelligence responsibilities are in the fields of production, deployment, manning, force levels, use, and costing. Problems arise, however, in going from the general to the specific. Questions of nuclear rocketry, scientific payloads on satellites, and even biological problems of space, straddle the OSI-FMSAC fence. An OSR-FMSAC "difference" can arise from the simple fact that a foreign solid-propellant facility may be both a production plant and a research center. Although the office directors cooperate well in efforts to avoid overlap and duplication of effort, as well as to insure against gaps, many hours are spent, especially at the working

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level, in "coordinating" efforts required to bypass or bridge the regulatory holes.

We found it impossible to separate the question of mission delineation from consideration of matters beyond the scope of this survey. A number of senior officers we spoke with expressed misgivings about present organizational and functional separations in the missile and space field within the Directorate of Science and Technology, as well as between that directorate and the Directorate of Intelligence. Frequently criticized were the fragmentation and overlapping of effort without adequate central direction and control. FMSAC itself is a relatively small office working in a very large field where conclusions reached can and do have national budgetary impact as well as national security implications. FMSAC plays a major role in GMAIC, but does not itself have detailed expertise on all matters within the GMAIC charter.

We are not prepared on the basis of this component survey to make major organizational proposals. We realize that many human as well as technical factors need to be weighed. We believe, however, that consideration should be given now to some realignment, at least to the possibility of combining the analytic functions of OSI and FMSAC in the strategic weapons field, whether by transfers from OSI or by move of FMSAC to OSI. We also believe that this organizational review should include consultation with the DDI, particularly but not only on matters relating to the production and dissemination of finished intelligence.

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Recommendation No. 4

That the Deputy Director for Science and Technology

- a. expedite preparation of a Headquarters Regulation on the mission and functions of FMSAC, and
- b. review the organizational structure of his directorate as it affects missile and space intelligence, considering here at a minimum some realignment of OSI and FMSAC responsibilities, and including in this review consultation with the Deputy Director for Intelligence.

Community Relations and Problems

The FMSAC representative at NSA is fully integrated in the organizational structure there as a special assistant to the Director of DEF/SMAC. The missions of FMSAC and DEF/SMAC are largely complementary, and working relationships are excellent.

During this survey, the Director of FMSAC was selected to be the new Chairman of GMAIC. As was noted above, four FMSAC employees work full time in the GMAIC Secretariat. The chief of the FMSAC Project Staff is the CIA member of GMAIC. The chief of the Space Systems Branch is chairman of the GMAIC Space Working Group, and four other Project Staff employees are the CIA members of four GMAIC working groups. Participating in GMAIC work takes a large percentage of the total man-hours of the Project Staff, particularly during the preparation of contributions to major National Intelligence Estimates.

FMSAC's relations with NASA, referred to above, have been close and mutually beneficial. FMSAC also maintains contact with other

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parts of government and private industry in the missile and space field.

All of this is not to say there are no problems. Time and again in this survey we heard comments regarding duplication of effort. All conceded that some redundancy is desirable for independent checks and confirmations; moreover, redundancy is sometimes more apparent than real, as, for example, when different groups analyze the same data for different purposes. But in some areas at least the picture painted is one of less than open communication and of excessive duplication. FMSAC disseminates its contractor reports; FTD does not, holding that its contractor reports are confidential to it and that appropriate information is published in finished FTD reports. A number of different government agencies contract out work in the missile and space field; there is no central coordinating authority to protect against the possibility that different agencies may be contracting with different firms for essentially the same work. Trajectory analysis is performed in FMSAC (which has gained an enviable reputation in the field), NSA, FTD, and elsewhere. The ELINT analysis duplication is worse. Telemetry analogs prepared at NSA go to more than 20 places. Not all analogs go to all these places, but to some extent at least it is possible for the same raw information to be analyzed in CIA, at NSA and several other places in the Department of Defense, and also by several contractors. Responding recently to a request for

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specification of gaps, deficiencies, and redundancies, the Director of FMSAC highlighted the lack of inter-Agency access to raw and partly processed information and finished contractor reports, the "trickle" of funds spent for analysis as compared to the amounts spent on collection efforts, and the duplication of effort in the field of ELINT analysis.

There is an existing organization for cooperation and coordination in the ELINT field. The Telemetry and Beacon Analysis Working Committee (TEBAC) was created in April 1960 by the Director of NSA as an instrument for the rapid exchange of data, ideas, techniques, and methodology, and as an organizational "patch" to insure efficient utilization of resources devoted to analysis of signals intercepted from Soviet missiles and space vehicles. The chairman of TEBAC is from NSA. The CIA member is the chief of FMSAC's Signal Analysis Division. TEBAC has symposia three or four times a year on major problems. The members of TEBAC include not only government agencies but a number of private firms engaged in the field.

Although TEBAC is not an official USIB body, the CIA member tells us it has been helpful and useful in a number of ways. The Director of FMSAC believes TEBAC might be a more effective organization for controlling the ELINT-analysis effort and for eliminating excessive duplication if it were brought into the USIB structure under GMAIC.

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We are under no illusions on the size of some of the problems indicated above. Earlier in this section, however, we recommended consideration be given now to some organizational realignment within the Agency. Here we recommend a wider review, particularly as regards flows of missile and space information in the intelligence community and duplications of effort, including contracting arrangements, in the fields of ELINT and trajectory analysis. This review would be undertaken with a view toward development of proposals for appropriate action by the Director of Central Intelligence.

Recommendation No. 5

That the Deputy Director for Science and Technology, in consultation with the Deputy to the DCI for National Intelligence Programs Evaluation, undertake a review of the intelligence community's efforts in the field of missile and space intelligence, particularly as regards flows of information and duplications of effort, including contracting arrangements, in the fields of ELINT and trajectory analysis, with a view toward development of proposals for appropriate action by the Director of Central Intelligence.

Special Systems Operations Center

Plans approved by the DD/S&T during the course of this survey call for the establishment within the present FMSAC area on the ground floor of headquarters building of a new Special Systems Operations Center (SSOC). [REDACTED]

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[REDACTED] but the SSOC's responsibilities will extend also to other [REDACTED] intelligence-production efforts. The SSOC will not

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replace the present FMSAC Control Center but will be located adjacent to it and in part integrated with it. Manning the SSOC will be personnel of OEL, OSI, and FMSAC. Since full details on this are still being worked out, we offer no formal recommendation here. In line with the thoughts expressed earlier in this report, however, we believe consideration should be given to making the SSOC and the present FMSAC Control Center a single center.

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PANELS AND CONTRACTS

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EXTERNAL CONTRACTS
FOREIGN MISSILE AND SPACE ANALYSIS CENTER

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<u>CONTRACTOR</u>	<u>CONTRACT TITLE</u>	<u>CURRENT CONTRACT COMPLETION DATE</u>	<u>FY-1969</u>	<u>FMSAC UNIT</u>
[REDACTED]	Digital Computer Program	3/31/69	\$100,000	ADP Staff, Activities Interpretation Div.
Sylvania Electronic Systems, Electronic Defense Laboratories	Analysis of [REDACTED]	8/15/69	\$149,000	Space Systems Branch, Project Staff
Electromagnetic Systems Laboratories, Inc.	Signal Analysis	5/15/69	\$300,000	Signal Analysis Division
[REDACTED]	Digitized TM Analysis System	1/15/69	\$60,000	Space Branch, Signal Analysis Division
[REDACTED]	Services of [REDACTED]	6/30/69	\$27,000	Space Branch, Signal Analysis Division
[REDACTED]	Telemetry Analysis Training	- -	\$14,000*	- -
Lockheed Missiles and Space Company	Technical Analysis of Space Systems	7/31/69	\$361,000	Space Systems Branch, Project Staff
TRW Systems Group	Trajectory Analysis	3/14/69	\$300,000	Trajectory Analysis Division
TRW Systems Group	Technical Analysis of Missile & Space Systems	6/30/69	\$1,017,000	Project Staff

* This represents FMSAC's share of a \$40,000 training course used also by OET and OSI.

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V. PANELS AND CONTRACTS

In this section we discuss briefly several panels of experts who serve the Agency on advisory boards, and we review FMSAC's major external contracts. During this survey we heard more criticism of panels and contracts than of any other aspect of FMSAC (or Agency) operations. Some of the matters raised go far beyond the scope of this survey, but it has been impossible to look at FMSAC without some consideration of the larger questions.

Advisory Panels

FMSAC handles the administration of one advisory group, the Space Intelligence Panel, and participates to some extent in briefings and discussions with two other panels, the Strategic Intelligence Panel and the S&T Advisory Panel.

The Space Intelligence Panel normally meets twice a year. It met early in 1968 and again in November. Panel members receive briefings, discuss conclusions reached by the intelligence community in the field of space, and provide advice. Chairman of the group is Dr. Simon Ramo of TRW Inc. The eight other members on the listing provided us in October include one from the Atomic Energy Commission, one from the Carnegie Institute of Technology, and six from private industry. The firms these last six are with are Aerospace Corporation, General

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Motors, Raytheon, Aerojet General, Polaroid, and Jet Propulsion Laboratory.

The ten-member Strategic Intelligence Panel, formerly known as the Hyland Panel, is currently chaired by Dr. Reuben Mettler of TRW. In the past this panel, administration for which is now handled by Office of National Estimates, has met during consideration of NIE 11-8, Soviet Strategic Attack Forces.

The six-member S&T Advisory Panel is chaired by Dr. William Perry of Electromagnetic Systems Laboratories (ESL). Four of the other five members are government officials; the fifth is Dr. James Burnett of TRW. This panel, administered by the office of the DD/S&T, meets about every two months.

Comments on Panels

This survey does not attempt to evaluate these panels. The use of such groups, especially--so far as this survey is concerned--the Space Intelligence Panel, would seem to be in accord with the original charge to FMSAC (HN 1-39, 7 November 1963) to "utilize the best of our national capabilities, both private and governmental...."

We found, however, that criticism and misgivings about these panels are widespread. The use of panels is "an admission of incompetence." Many of the panel members "are from industry and looking for work." The companies "get more than they give"; they would be willing to "pay and pay well to get on those panels--the information

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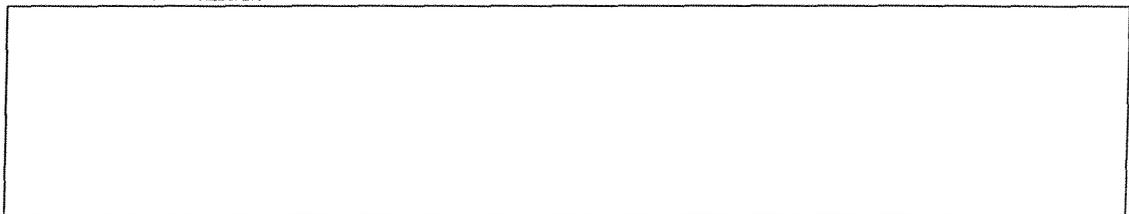
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they get is worth money." "It's not possible for them (industry representatives) to be objective." "One has to have faith, but one just can't say a man's not prejudiced." Maybe the Space Intelligence Panel "has too many members with a stake in the Apollo program." It would be "useful" to convene a panel of outside experts when one has a particular problem, but panels "should not be institutionalized." The Agency would be wise to "divorce itself from panels."

Time and again our attention was directed to the fact that two of the three panels referred to above are chaired by individuals from TRW, which receives about half of the contract money expended by FMSAC. The third panel is chaired by a man from ESL, with which FMSAC has a \$300,000 contract. Both TRW and ESL have other contracts with the Directorate of Science and Technology.* Several of the other members of the Space Intelligence Panel are also from firms with which the Directorate of Science and Technology has contracts.

Though we do not here question the integrity of any individual panel member, we cannot help but note that critics of the Agency or of the Administration could well paint the present picture as one of "conflicts of interest."



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We state the foregoing in full realization that if the Agency wishes to use advisory panels and to draw in this way on the expertise available in private industry, it cannot find many, if any, firms in the missile and space business that do not have government contracts. Yet we also note that Presidential Executive Order 11222 of 8 May 1965 prohibits even apparent conflicts of interest. Section 302 of that Executive Order states: "A consultant, adviser or other special Government employee must refrain from any use of his public office which is motivated by, or gives the appearance of being motivated by, the desire for private gain for himself or other persons, including particularly those with whom he has family, business, or financial ties."

We believe that this whole question is one that should be kept under constant review.

Recommendation No. 6

That the General Counsel periodically review in the light of existing contract arrangements the make-up and operation of advisory panels used by the Agency, and report to the Executive Director-Comptroller at least once a year on legal implications.

Contracts

Nearly sixty cents of every FMSAC dollar goes for the nine external contracts shown on the list facing the first page of this section.

The largest single current FMSAC contract is a \$1,017,000 one with TRW Systems Group for technical analysis of foreign missile space systems. FMSAC also has a \$300,000-dollar contract with TRW Systems

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Group for trajectory analysis. The second largest single FMSAC contract is a \$361,000 one with Lockheed Missiles and Space Company for analysis of space vehicle systems. Other FMSAC contracts are with the Electronics Defense Laboratories of Sylvania Electronic Systems (\$149,000), Electromagnetic Systems Laboratories (\$300,000), [redacted] Corporation (\$100,000), and [redacted] (one \$60,000 contract on telemetry analysis; one \$27,000 contract for the services of a telemetry expert; and \$14,000 for FMSAC's portion of a \$40,000 training contract shared by OSI and OEL).

Contract Handling

As part of this survey we examined methods of contracting, contract controls, evaluation reports, etc., within the Directorate of Science and Technology; we talked with technical monitors of contracts in FMSAC, as well as with other FMSAC officers about the contracts; and we discussed contracts in general with officers in the office of the DD/S&T and in the Office of Logistics.

We believe that the Directorate of Science and Technology has an adequate system of internal administrative controls for the initiation, negotiation, and placing of contracts, and that these activities are being handled within Agency regulations. FMSAC contracts on trajectory and telemetry analysis are normally negotiated on a sole-source basis; in view of the narrowness of the fields, we find no problem with this, provided the system continues to insure that the principle of competitive bids is followed wherever possible.

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There are weaknesses in the contract system. Neither the Agency as a whole nor the Directorate of Science and Technology maintains a central file of all contracts, and there appears to be no real management substitute for checking all contracts for possible overlaps and duplications. From our conversations with senior officers in various offices of the Directorate of Science and Technology, we understand that full information on contracts is not exchanged between offices. Moreover--and this is perhaps the greatest weakness--there is no real system in FMSAC, or in the directorate as a whole, for recording meaningful evaluation of the contracts.

Evaluations of Contracts

There are two formal, regularized systems for reporting on and reviewing contracts during performance periods. While each has value as a management control mechanism, neither as presently operating appears to function so as to produce on a regular basis meaningful evaluations of contract product or performance, that is to say, continuing judgments on whether we are getting our money's worth. Some of the evaluations provided us orally during this survey have raised doubts in our minds on the actual worth of some contract work.

Each contract monitor is required to prepare every sixty days a "Contract Inspection Report." This is done by filling in some blanks and checking some boxes on a simple one-page form. The back of the form may be used for additional comments. On "overall performance of

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contractor," the monitor checks one of seven boxes with captions running from "outstanding" down to "unsatisfactory"; the form requires added comment only if one of the two lowest ratings is checked. We reviewed a large number of reports prepared in FMSAC. Though there were some few exceptions, most contained little but stereotyped remarks that could hardly be considered meaningful evaluations. (When we asked one of the contract monitors if he ever prepared any significant written evaluation of the sizeable contract he has responsibility for, he responded with a simple "No"; when we asked whether he thought he should prepare such, he said he could see no reason why he should-- "Who would read it?")

Each quarter there is at the directorate level a review of all contracts. Some of the directorate officers who participate in this review admitted to us frankly that they do not get meaningful evaluations of the worth of contracts.

In addition to the sixty-day reports and quarterly reviews, the DD/S&T and the directors or deputy directors of FMSAC, OEL, OSI, and OCS once a year make a tour of contractor facilities. Technical monitors of the contracts are included in the visits at the various locations. Discussions cover the contracts, what the Agency wants the contractors to do, plans for the future, and so forth. Among other points, an effort is made at this time to insure that there is no duplication of effort among contractors serving different Agency offices.

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Furthermore, when renewal of contracts is proposed, memoranda are prepared which do include at least some evaluation of past work. Some of the memoranda we saw fell short of measuring actual worth of the contracts.

The Actual Worth

This survey does not attempt to evaluate the worth of FMSAC's contracts. We lack the expertise necessary for this. Because of the criticism we heard at many levels of some of the contracts, however, we spent much time discussing value received for money spent.

There are, of course, many advantages to contracts, not all of them apparent in the form of finished contractor reports, hardware provided, or work performed. Contracts provide a tie-in to industry and are one means through which our employees can keep abreast of developments in their fields--and the missile and space business is one of rapid and dramatic changes. Contracts enable the Agency to take advantage of expertise not otherwise obtainable. Through contracts the Agency can get the services of individuals who are needed only for short or relatively short periods, or who do not wish to leave industry, or who if they did leave industry for government careers might in a few years themselves be behind the state of their art. Moreover--and this is a highly significant factor--work can be done under contracts which could not otherwise be done unless T/Os were increased.

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Not all of the criticism we heard was directed against specific contracts. One senior official who attacked what he called the "proliferation of S&T contractor entities" said the contractors sometimes become "private intelligence units"--that is to say, the contractors get their raw intelligence information from us and then become, at times virtually our competitors as regards intelligence conclusions. Another senior official who came from industry noted that at his firm people tried to resist having CIA officers tell them what to do, that they felt they knew more about how things were to be done. We heard a number of implications that it is sometimes hard to tell who is wagging whose tail. Several senior officials expressed belief that the Agency should not rely on contractors for routine intelligence work, that it should rather develop its own expertise.

Regarding several of FMSAC's contracts there appear to be fairly widespread doubts that we are getting our money's worth. One contract monitor who feels that the contractor's performance is all right estimates that four people working in FMSAC could do almost all we are paying \$300,000 for. Another estimates that his branch with four or possibly five more people of medium grade could do, and do better, all that is being done by a contractor for over \$350,000 a year--and he argues that from a security point of view, internal work would be better.

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In drafting the above paragraphs we have considered specifically only those remarks made to us by senior or relatively senior officers, persons intimately familiar with the contracts. We have tended to discount criticisms originating with individuals who, while they may be users of contractor-supplied information and data, are perhaps not in position to have adequate perspective. As we have indicated above, we realize that a number of factors need to be weighed in contract considerations. Nevertheless, it is clear to us that either (a) the critics are right and we should reconsider some of the contracting effort, or (b) there has been a breakdown in communications between management and employees. In either case we believe management should give the matter attention.

Recommendation No. 7

That the Deputy Director for Science and Technology

- a. establish a central file in his directorate of all external contracts and review the adequacy of existing procedures to insure against duplication of effort in external contracts, and
- b. strengthen present procedures for evaluating contractor performance so as to produce on a continuing basis more meaningful evaluations on actual worth of contracts.

Recommendation No. 8

That the Director of FMSAC

- a. encourage within FMSAC more frank exchanges of opinions regarding contractor work, and

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- b. review FMSAC's contracts with outside firms with a view toward (1) determining whether it would be more economical or otherwise beneficial to the Agency for some of the work now being done by contractors to be performed internally, and (2) if findings are positive, making appropriate recommendations to the Deputy Director for Science and Technology.

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