



AH. DC

MEMORANDUM FOR THE RECORD

21 August 1963
AFH/D/TSCH/OSA/DD/S&T

SUBJECT: Unique Assets of the Agency in Collection
Equipment Procurement

1. Introduction

A brief survey of the history development of airborne and satellite photographic reconnaissance systems, and the reactions of people to these, show that the CIA has some methods of operation and procurement that give the Agency a unique status in the field. As a result of this status, the AF is currently using our contracting and security facility on some of their programs, and is in many ways attempting to duplicate techniques of the Agency. The following is an attempt to define the characteristics which are now so sought after; this definition is necessary for two purposes: first, so that we can ourselves retain this capability; second, so that partial application by ourselves or others does not lead to disastrous situations (e.g., one can take an excellent pudding recipe, and bake it like a cake; result--garbage). Most of my familiarity with the techniques and methods associated with technical developments come from the contractors facility, only a small amount from experience within the Agency.

2. Comments

First aspect of interest in Agency developments is the quick reaction time for the initiation of development of a system. Noticeable is the lack of full staff studies, feasibility programs, development plans, engineering analyses, etc. Rather, one sees the following activity: first, a qualitative establishment of a need; second, a broad-brush definition of a possible way to fill that need; third, obtaining a proposal from a capable contractor; fourth, evaluation of the course of action by a very limited group of very capable people (e.g. Land-Baker-Furcell); and fifth, the initiation of work with a minimum of redtape. Some risks are taken on cost; the work-statement is often ill-defined (possibly containing some questionable items). The work is initiated, and many of these factors are ironed out as the work progresses. An active and determined attempt is made to maintain security by strict control of information and limitation on numbers of people involved.

In addition, active authority is delegated to the operating level. Most decisions can be made immediately; a long chain of government approvals are not generally required. Rather, the superiors are kept informed, and can therefore re-direct if necessary.

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2. (cont).

However, the initiation of action can occur immediately. This authority delegation also occurs at the contractor level as well; action is started in the direction of best estimate, consultations occur after work is under way, or at least people have actively started to solve the problem. Occasionally, this leads to rather expensive rework or redirection; generally the effort gets done very much sooner.

Documentation is minimal. Progress reporting is done directly by personal contact with necessary people; formally edited documents, and well-prepared briefing charts are not required. Unfortunately, this requires a lot of traveling, both by the government and by the contractors. The pace of activity is fast, on the spot decisions need to be made (which requires on-the-spot authority): there is no requirement to wait the writing, editing, printing, transmission, approval chain, for either reports or system changes. As a disadvantage, it is often difficult to state, two years later, why something was done: often, even to state what was done.

3. Current Status and Case History

The CORONA program is, I believe, a good case history of the initiation of development under this method of operation, and of the slow (and inevitable?) degradation of the method. CORONA was started initially as a short-term, high-risk development, to fill in the community's needs during the development of SAMOS (the AF "white" reconnaissance satellite program), then falling behind schedule. A small, competent team was assembled, and work initiated. Additional people were brought in as needed. All concerned were expected to contribute in any way they could, cutting across disciplines and fields of interest. By keeping the groups small, communications were maintained without resort to a large amount of paperwork. Some mistakes were made; however, early flights were possible, and some basic faults were uncovered which could not have been uncovered without the flight experience. The life of the program was extended; year by year, more people became involved, and, as an operational system, tighter controls have been imposed. The complexity and capability of the flight gear has steadily increased; as simple items have proven out, additional requirements have arisen.

The CORONA system has been developed with one basic ground rule: keep it simple, to do the required task, and not try to do the "optimum" task; the optimum can be approached, but is more important to get the job done, than to do all jobs for all people.

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3. (cont)

The advantage of this procedure is that often the problems are not foreseeable, the simpler the system, the easier it is to get going, and find the unforeseen problems. Some of the typical problems uncovered in this manner in the CORONA program are:

- Techniques of programming satellite cameras
- Deficiency of acetate-based film
- Recovery timing problems
- Tracking and control of cameras in orbit (and vehicle)
- Post-flight data requirements
- Static electricity discharge problems
- Recovery techniques

4. Summary

On the technical side, the reflecting into contracting and security, the prime factors differentiating the Agency role in development of collection systems and, for example, the Air Force are:

1. Direct and frequent contact between the contractors and the responsible and authorizing government program officer
2. A minimum of paper work and formalized reporting.
3. Rapid decision, and cleaning up of problems as they occur; not attempting to foresee all problems.
4. Minimum, simplified approach to the requirements.
5. Limited consultations and approvals to small, competent, and respected groups.