31 March 1965

Examples of the Air Force Impacts on the CORONA Program

Forward

Under the technical, contractual, and operational sponsorship of the CIA there has developed at the Lockheed Advanced Project Operation at Palo Alto, California (A/P facility), a thoroughly trained, professionally capable, and well experienced team to conduct pre-mission planning, on-orbit analysis and operation, and post-mission evaluation of the CORONA payload. While the complexity of the total system required careful interfacing with the booster system, the A/P team, superintended by the CIA resident office, addressed itself to the payload and developed effective and harmonious working relationship among all participating contractor and governmental organizations.

The effectiveness of this team is clearly evident in the fact that the CORONA payload became more reliable than the booster and orbital vehicles to which it was committed. With this success came political attractiveness. The D/NRO, which heretofore had recognized the professionalism, dedication, and authority with which the CIA handles the program, now began a relentless campaign to take over complete control. Numerous attempts were made to undermine the confidence of the community in the CIA's ability to guide the program. While this was going on, CORONA missions were being lost due to failures of D/NRO-supplied boosters and orbital vehicles. Always mindful of the national significance of CORONA and motivated by an obsessive desire to continually improve its product, the A/P group effectively resisted these early probes by merely letting payload performance speak for itself.

D/NRO political pressure intensified until in late November 1964 it reached the heights of irresponsibility by attempts to disable the A/P team and inject into the program in its place an inexperienced [redacted] element with an unprepared and inadequate systems of operation.

[redacted]
Copy # ____

HANDLE VIA [redacted]
CONTROL SYSTEM ONLY

The following cases will serve to illustrate the actions of D/NRO. These are not isolated cases.

Illustrative Cases

Technical

Item 1. Recovery Vehicle Forebody (Ablative Shield)

Background

No forebodies have ever failed in flight. In January 1965 a [redacted] forebody failed a "cold soak" test at age 27 months. General [redacted] staff (Program A, NRO) noted that several forebodies which exceeded a 12 month operational "shelf life" were scheduled to be flown. (The same was true of [redacted] forebodies). Without consultation as to impact on schedule and without technical data on the forebodies, [redacted] was issued by General [redacted] directing that no forebodies which exceeded a "calendar life" of 12 months at recovery would be flown. The CIA representative at the A/P advised the community immediately [redacted] of the catastrophic effect that this directive would have on the CORONA Program.

Action

CIA Headquarters took action immediately to protect the integrity of the CORONA Program and to ascertain the actual limitations on "calendar life" of forebodies. The General Electric Company advised that the forebodies had a "calendar life" of 16 months and a "shelf life" of 12 months. The A/P had available in addition a study approved by Colonel Murphy (former CIA resident manager at A/P, now on General [redacted] staff) which had indicated a forebody "calendar life" of 36 months. CIA Headquarters immediately authorized a test program to investigate the aging effect on forebodies. As a part of this test program, one of the "over-age" shields which was scheduled for flight was demonstrated by GE as flightworthy. CIA Headquarters presented a report to the D/NRO on 1 March suggesting a 17 month "calendar life" be adopted as an interim measure and Program A directive was rescinded.

Summary

Uncoordinated and unilateral direction by Program A threatened a catastrophic impact on the program. CIA Headquarters' timely rational actions sustained the schedule and solved the technical problems which were associated.

Technical

Item 2. Technical Directives, Formulation, and Implementation

Background

Prior to the summer of 1964 Technical Directives in the CORONA Program were presented by the contractors at the Systems Engineering/ Technical Direction Meetings and were subsequently reviewed and approved by the Configuration Control Board (CCB). The CCB was a joint CIA-Program A-NRO Staff Technical Board. In late 1964 the responsibility for writing Technical Directives was assigned to [redacted] Corporation. Not only have the [redacted] Technical Directives been poorly written but contractors have been unaware of what changes were being contemplated; and a cumbersome and overcentralized procedure has been established for processing. Regardless of the scope of the Technical Directive a Formal Design Review is required in addition to which all specifications, procedures, etc., must be reviewed by [redacted] the Air Force, and the D/NRO.

Action

CIA Headquarters has been attempting to work with Program A to improve on the combersome procedures. In several instances where desirable, technically sound improvement was being unnecessarily delayed by the current Technical Directive procedures, CIA has coordinated with Program A and/or the NRO Staff informally and has authorized incorporation of the modifications by a less formal Additional Work Authorization Approval.

Summary

The procedures used in handling Technical Directives reflect two basic problems in CORONA today. The D/NRO in attempting to act as a Project Engineer who reviews all wiring changes, is failing to properly utilize the resources which are available to him and which have made the program a success. [redacted] on the other hand, must justify its existence in the CORONA Program through large numbers of meetings, Design Reviews, Specification Reviews, etc., and the [redacted] participation has caused undesirable duplication, increased cost, and unnecessary delays without contributing anything which, at least in the payload area, has proved beneficial.

Technical

Item 3. System Spares

Background

Aside from the overall goal of two recovered buckets per month, D/NRO has provided very little information to CIA Headquarters on the CORONA requirements for flight units and/or spares. Although much of the cause lies in the lack of certainty within D/NRO as to what the CORONA requirements are, a recent problem developed because a spares requirement was issued through Program A to Lockheed, Sunnyvale (Agena contractor) without a follow-up requirement being passed to the payload contractors. Through Lockheed, Sunnyvale, the Lockheed A/P received information on the spares requirement and began plans to accelerate production of payload vehicles. ITEK (camera manufacturer) and General Electric had received no notification however, with the result that in February 1965 a production inbalance arose within CORONA Program.

Action

On 4 February CIA Headquarters called a meeting of all payload contractors and a coordinated delivery schedule was prepared. There remained, however, at the meeting, disagreement between Program A and NRO Staff as to what the spares requirement for CORONA should be.

Summary

CIA Headquarters needs to be kept informed on a timely basis of flight and spares requirements for CORONA payloads. CIA Headquarters is responsible for insuring the availability of adequate numbers of flight ready payload vehicles and of certifying payload flight readiness to meet appropriate intelligence community launch dates.

Technical

Item 4. Mission M-26

Background

In the interest of meeting flight schedules established at General [redacted] Headquarters, Captain Johnson of that Agency, (now Major Johnson of NRO), directed the contractor to deviate from proven environmental test on CORONA Missions M-25, M-26, and M-27. The normal environmental tests were reduced from 4 days to one day. When the Systems Engineering Group and the CIA Technical Representative at the A/P learned of this deviation they raised strong objection and asked for the complete results of the environmental testing. The CIA Technical Representative at the A/P, after examining the test data, pointed out to the community that the deviation invalidated tests of these instruments for susceptability to corona marking (static discharge - not to be confused with CORONA Project). System M-25 was already at the base and had been bought-off by CIA before the information on the shortened test was uncovered. A long recycle time would have been involved if it had returned to test and it was decided to allow it to fly. The booster failed and the system did not orbit.

The CIA Technical Representative refused, however, to certify M-26 for flight until a rerun of the environmental test was conducted. Captain Johnson of Program A directed the contractor to ship the Systems M-26 and M-27 to the base without additional testing and Program A took responsibility for these systems without flight readiness having been established in order that they could meet their launch schedule. Captain Johnson bought System M-26 for the government and M-26 was flown as Mission 9062. The film returned from the mission was largely unusable due to corona static discharge marking.

Action

Subsequent to M-26's flight the recommendation of the CIA Technical Representative was accepted and System M-27 was returned to environmental test. Test showed that this system had a bad roller.

Summary

This particular incident perhaps more than any other demonstrates the need for CIA participation in the CORONA Program. Personnel from the NRO Staff and Program A who are divorced from the intelligence mission are more interested in launch schedules and recoveries than in the quality of the photography. At a meeting in Washington on 4 February 1965, a sharp exchange took place between Colonel Buzzard of the NRO Staff and Mr. [redacted] of CIA Headquarters. Colonel Buzzard stated that 16 CORONA launches had been scheduled by D/NRO for 1965 and that these launches would take place according to the established schedule. Mr. [redacted] made it clear to Colonel Buzzard that CORONA was an intelligence reconnaissance program and that the missions would be flown in response to intelligence requirements, not in response to pre-established Air Force launch schedules.

Operational

Item 1. Removal of Lt. Col. Vernard Webb as Advanced Projects Resident Manager

Background

On 2 December 1964, Lt. Col. Vernard Webb, the then CIA Resident Officer at the A/P, received military orders directing that he report on 3 December 1964 for duty at the Satellite Test Center. Reassignment on such short notice is contrary to normal military personnel policies and it can be demonstrated that no emergency need existed for Lt. Col. Webb's services at the organization to which he was assigned. Webb's departure from the A/P left the facility unexpectedly and unnecessarily undermanned at the time of an impending CORONA launch operation.

Action

CIA Headquarters sent a relief temporary duty personnel to the A/P to maintain the integrity of the payload and the effectiveness of the operational control of the mission. CIA has also been forced to take steps to prevent future complications which could arise from re-assignments of military personnel on detached service.

Summary

The untimely political recall of Lt. Col. Webb has seriously undermined the confidence in the entire program of military staffing within the Agency.

Operational

Item 2. [redacted] (D/NRO) [redacted] Message

Background

On 30 November 1964, D/NRO directed that all pre-mission, mission, and post-mission CORONA traffic would be handled exclusively by the D/NRO/The Satellite Operations (SOC) Center in Washington and General [redacted] /The Satellite Test Center (STC) on the West Coast. The CORONA Mission Command Post was put at the STC, and D/NRO Message [redacted] indicated that all CORONA responsibility was with [redacted] further stated that changes in the CORONA Operations Manual would be made in the near future. This NRO action was coincident with orders reassigning the Advanced Projects Resident Officer Webb, and it had been preceded by a heavy infiltration of [redacted] personnel in the company of General [redacted] staff [redacted] Colonel Murphy) during the previous operation.

A/P message [redacted] (30 Nov 1964) warned the community that the Satellite Test Center was not capable of handling CORONA operational problems without extensive training. The A/P facility requested that such transfer be delayed until proper cross-training could be accomplished; however, the following day, 1 December, a Satellite Operations Center message [redacted] deleted the A/P and added the Satellite Test Center to the CORONA Reports Control Manual.

On 4 December as a part of the operational function transfer, [redacted] message [redacted] directed a CORONA training exercise to be conducted. The training exercise was to begin 4 December and be completed 8 December. On 5 December, Genera[redacted] faced with the training exercise, partially re-established the A/P in the CORONA reporting net until such time as a full transfer could be affected. Program A message [redacted] On 7 December A/P message [redacted] provided additional details concerning the STC's inadequacy to perform the CORONA support. The A/P also estimated that two to four months would be necessary to modify A/P computer programs for use at the STC. Following this message, the A/P was put back in the normal reporting channels and was asked to participate in the training exercise. The A/P declined and on 8 December NRO message [redacted] deferred the training exercise and it was not rescheduled.

On 15 December the D/NRO made a personal visit to the A/P and the STC to learn first hand why a transfer of operations would be difficult. We assume that Dr. McMillan was impressed with the scope of the work being accomplished by the A/P and the competence and professionality of the staff. We assume also that he must have been at least aware of the difficulties being experienced by Program A in other areas of CORONA (i.e., booster). Three successive booster problems on the December 1964 mission resulted in a 4-day slip in the payload launch. On the first attempt (15 December) one of the pins on the hold-down mechanism did not withdraw. On 16 December gyro drift on the main engine caused cancellation. On 17 December no ignition in the booster resulted in a 2-day slip. Following the third cancellation the D/NRO returned to Washington.

Action

The CIA representative at the A/P attempted insofar as possible to inform the community of the dangers associated with this rash transfer of functions. CIA Headquarters, after consultation with the appropriate officials, issued directions that procedures in effect prior to NRO message [redacted] would be followed.

Summary

NRO message [redacted] represents the climax of a power grab attempt within government circles. The actions taken by the NRO were not only poorly staffed and technically unrealistic, but they demonstrated a much greater concern on the part of the D/NRO for the political management policies than for intelligence reconnaissance operations.

Operational

Item 3. The Rejected Command

Background

On Mission 1013 an unexplained anomaly caused the instruments to take about 400 unprogrammed cycles Northbound on Revolution #1. The quality of the telemetry was poor and instrument status could not be established until after Revolution #2. It was established that although the system had started prematurely on Revolution #1, it had turned off normally when the "off" signal was received from the stored program. The next Revolution which the vehicle would be acquired was Revolution #6. The A/P CIA Operations Chief spent the ensuing five plus hours meticulously studying all available data. From these data and from a very intimate knowledge of his payload he was confident that the payload was operating normally. He decided that he would go for the operation on Revolution #6 if the [redacted] asked for it. When the [redacted] asked for Revolution #6, the A/P representative instructed the STC Field Test Force Director (FTFD) to send the appropriate command insturctions to the tracking station. Telemetry on Revolution #6 was again poor. While the A/P team at the STC was evaluating payload status and discussing the matter, the FTFD, acting on telephone instructions from Program A and on advice of [redacted] called the Test Controller and directed the payload be put in "off" mode. The A/P Operations Chief attempted to recover from this situation but the vehicle faded before anything could be accomplished. Evaluation of telemetry data confirmed that the payload had been performing normally. It continued to perform normally throughout the mission.

Summary

The interference with A/P authority by personnel of Program A and the STC resulted in the loss of important intelligence information.

Operational

Item 4. The Bad Orbit

Background

The original orbit developed for Mission 1014 by Lockheed, Sunnyvale, for Program A proved to be unusable for the mission. The orbit was to have been designed for maximum Cuban coverage, but due to the Program A contractor using the wrong orbital decay factor in computation, the orbit developed had serious gaps in the primary area in interest. By the time the error was discovered it was too late to correct without slipping the flight.

Action

The A/P proposed developing a suitable orbit for Cuban coverage on its computers, since it had the necessary computer programs to accomplish the job (A/P message [redacted] and could respond more rapidly. [redacted] accepted this proposal and the A/P proceeded with the computations. The new orbit was supplied to the [redacted] on the same day.

Summary

Rapid response capability and accuracy of the A/P Mission Planning Group allowed a minimum schedule slip to be caused by the orbit error.