SYLVANIA ELECTRONIC SYSTEMS

SYLVANIA ELECTRIC PRODUCTS INC. *Subsidiary of* GENERAL TELEPHONE & ELECTRONICS CORPORATION

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GENERAL SYSTEM

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15 July 1965

Mr. James Q. Reber of SORS. from Sheingold of Sylvania.

Dear Jim:

I regret that I was unable to stay over for the meeting of 14 July. Before I left on the 13th, I promised you that I would send you a brief note summarizing my understanding and views of the Satellite ELINT Program.

It is my understanding that the objective of the present COMOR Task Force effort is to assist USIB in establishing a balanced Satellite ELINT Program covering a five-year period. If possible, detailed emphasis on the FY-66 and FY-67 Programs should be considered. [redacted]

Previous attempts toward justifying the Satellite ELINT Program to the United Communities have been unsuccessful. Recent CIA attempts involving a detailed cost effectiveness methodology apparently have not been convincing. The present task force is looking for a different approach toward evaluating, generating and justifying a Satellite ELINT Program.

of ESL (Sylvania too)

During our meeting, both Bill Perry and I attempted to frame our discussion by beginning with the general objective and than proceeding to the necessary details. The chart which I drew on the board stressed the necessity for a continuous effort which relates existing and potential Sino-Soviet weapon systems capabilities to U.S. intelligence collection and analysis.

In the broadest of terms, General Search is related to Sino-Soviet R&D systems --- Directed Search is related to Sino-Soviet initial operational capability --- and Order of Battle is related to Sino-Soviet operational weapon systems.

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The terms "General Search," "Directed Search" and "Order of Battle" apply to all forms of intelligence collection. These include ELINT and photography from land, sea, air and outer space. The evolution of a complete intelligence picture of an enemy weapon system will require the utilization of several means of collection; therefore, when a particular method is chosen, it will be necessary to compare the effectiveness of one versus the other. As an example, let us assume that it is not possible to determine the electromagnetic radiation characteristics of an enemy weapon system on the perimeter because the enemy has a capability of tracking our aircraft and, due to good operational procedures, radar transmitters are turned off whenever U.S. aircraft are in the vicinity. Someday, Soviet space tracking systems may monitor our satellites in such a way that the on-time of a new radar is adjusted to coincide with the absence of U.S. satellites and the off-time is adjusted to coincide with the presence of our satellites. The above two examples imply that other collection methods (such as MOONBOUNCE) must be considered to gather important information without an enemy's knowledge that the information is being gathered.

The time-phasing of the Satellite ELINT Program must be related to the time-phasing of the USSR Weapon Systems Development Program. If not, it may be very difficult to justify.

The mission orientation presented by Bill Perry during the meeting (Chart II) is an important step in the total process. When the important signals are specified, an attempt should be made to associate these signals with specific functions to be performed by a postulated USSR weapon system. In other words, once the signal is obtained, measured and analyzed, what will the over-all systems analyst do with the information? How will the analyzed signal fit into the over-all weapon system synthesis? What other information will be required?

Chart II is a translation of intelligence requirements into specific signal detection and analysis requirements. Chart III is the next step in the process and translates signal requirements into equipment specifications.

Assuming that Chart II and Chart III can be detailed with some degree of precision, then it will be necessary to determine the probability of obtaining the required information with a specified Satellite ELINT System. (Of course, the probability of obtaining the same information with other collection methods must be considered also.) This

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next (feasibility) step in the process should include an evaluation of the 698, Poppy, and P-11 packages in order to obtain information relating to specific signals. If all of this can be accomplished, then an assessment of the existing program can be made and "holes" in the program can be identified. Costs for the entire process must be determined to obtain cost-predicted effectiveness data*.

I believe that a suitable methodology will evolve after the task force working members provide sufficient data to permit a careful assessment of the existing program and the performance of past programs.

Although it may be beyond the scope of the existent task force, I do believe that some comment should be made about the relationship of Satellite ELINT to some of our domestic weapon system programs. Actually, there are several, such as Anti-Radiation Missile Systems, Ballistic Missile Penetration Aids, Supersonic On-The-Deck Aircraft, etc., whose predicted performance will depend on the precise knowledge of the frequency and modulation characteristics of enemy radiators. I am convinced that if it were possible to determine these heavily dependent programs and the cost associated with them, a substantial Satellite ELINT Program would be easy to justify.

If you feel it would be of any value, I will be happy to elaborate on some of these points during our next meeting and, if need be, I would be willing to clarify some of the statements contained in this letter.

Sincerely,

Leonard S. Sheingold
Vice President-Advanced Technology

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*It would be of tremendous value if a study were made to determine cost-effectiveness actually achieved for all ELINT missions during the past three years.