

~~(S)~~ NATIONAL RECONNAISSANCE OFFICE

WASHINGTON, D.C.

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THE NRO STAFF

15 August 1968

MEMORANDUM FOR SAFSL (COLONEL FORD)

SUBJECT: Encryption of NRP Satellite Systems

A brief background survey has been conducted per your request concerning procedures and policies for encryption of NRP satellite systems. While there exists no predetermined policy on encryption [redacted] each NRP system is individually examined on its own merits, weighing the advantages and drawbacks of encryption against the threats to the system by not encrypting. In many cases, the final determination is a long, arduous task that is determined not only by the relative security of the system, but also by the engineering impact of encryption. Indeed, the decision may be a fluid one, varying from launch to launch as the program progresses.

The only written statement of policy found concerning encryption was one for meteorological satellite systems, a copy of which has been provided to your office.



Generally data has been returned on a common down-link channel for both bird health and intelligence data. In lieu of encryption, minimum risk has been achieved to peripheral stations by transponding data and transmitting in an analog form, low band, low power. Other procedures have included use of "privatized" stations protected from easy intercept by large, friendly land masses.

Telemetry data is not encrypted by either the U.S. or U.S.S.R. systems. On occasion some specific command systems have been encoded to minimize risk.

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If there is to be a general (or specific) rule regarding encryption, it would probably read somewhat like this:

"While encryption of satellite system data is highly desirable, a complete analysis must be made of each individual system concerned, carefully weighing the advantages and inherent disadvantages of encryption against the threat to the system by not encrypting. Due consideration must be given to the total mission of the system, the capability of the system to perform with and without encryption, the threat to the system (to include such intangible items as current international situation) and the overall impact of encryption on system engineering."



Captain, USAF
Dep Asst for Security
NRO Staff

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