NATIONAL SECURITY AGENCY
CENTRAL SECURITY SERVICE
FORT GEORGE G. MEADE, MARYLAND 20755-6000

FOIA Case: 75643A
29 June 2017

JOHN GREENEWALD
[redacted]

Dear Mr. Greenewald:

This is our final response to your Freedom of Information Act (FOIA) request of 15 November 2013 for Intellipedia pages on CORONA. A copy of your request is enclosed. As stated in our initial response to you, dated 17 December 2013, your request was assigned Case Number 75643. For purposes of this request and based on the information you provided in your letter, you are considered an "all other" requester. As such, you are allowed 2 hours of search and the duplication of 100 pages at no cost. Since there are no assessable fees, we have not addressed your request for a fee waiver.

For your information, NSA provides a service of common concern for the Intelligence Community (IC) by serving as the executive agent for Intelink. As such, NSA provides technical services that enable users to access and share information with peers and stakeholders across the IC and DoD. Intellipedia pages are living documents that may be originated by any user organization, and any user organization may contribute to or edit pages after their origination. Intellipedia pages should not be considered the final, coordinated position of the IC on any particular subject. The views and opinions of authors do not necessarily state or reflect those of the U.S. Government.

As explained in our previous letter, we conducted a search of all three levels of Intellipedia for the requested topic and located material responsive to your request and this material contained information from other government agencies. As a reminder, some material was sent to the appropriate agencies for their review and direct response to you. Other material was sent to appropriate agencies for their review and response back to us. Those other government agencies have completed their review of the material, and the document is enclosed. Certain information, however, has been deleted from the enclosure.

This Agency is authorized by statute to protect certain information concerning its activities (in this case, internal URLs) as well as the names of its employees. Such information is exempt from disclosure pursuant to the third exemption of the FOIA, which provides for the withholding of information specifically protected from disclosure by statute. The specific statute applicable in this case is Section 6, Public Law 86-36 (50 U.S. Code 3605). We have determined that such information exists in this record, and we have excised it accordingly.

In addition, personal information regarding individuals has been deleted from the enclosures in accordance with 5 U.S.C. 552 (b)(6). This exemption protects from disclosure information that would constitute a clearly unwarranted invasion of personal privacy. In balancing the public interest for the information you request against the privacy interests involved, we have determined that the privacy interests sufficiently satisfy the requirements for the application of the (b)(6) exemption.

Since these deletions may be construed as a partial denial of your request, you are hereby advised of this Agency's appeal procedures. You may appeal this decision. If you decide to appeal, you should do so in the manner outlined below.

- The appeal must be in sent via U.S. postal mail, fax, or electronic delivery (e-mail) and addressed to:

  NSA/CSS FOIA/PA Appeal Authority (P132),
  National Security Agency
  9800 Savage Road STE 6932
  Fort George G. Meade, MD 20755-6932

  The facsimile number is (443)479-3612.
  The appropriate email address to submit an appeal is FOIARSC@nsa.gov.
- It must be postmarked or delivered electronically no later than 90 calendar days from the date of this letter. Decisions appealed after 90 days will not be addressed.
- Please include the case number provided above.
- Please describe with sufficient detail why you believe the denial of requested information was unwarranted.
- NSA will endeavor to respond within 20 working days of receiving your appeal, absent any unusual circumstances.

For further assistance and to discuss any aspect of your request, you may contact our FOIA Public Liaison at foialo@nsa.gov. You may also contact the Office of Government Information Services (OGIS) at the National Archives and Records Administration to inquire about the FOIA mediation services they offer. OGIS contact information is: Office of Information Services, National Archives and Records Administration, 8601 Adelphi Road-OGIS, College Park, MD 20740-6001; e-mail: ogis@nara.gov; main: 202-741-5770; toll free: 1-877-684-6448; or fax: 202-741-5769.

Please be advised that records responsive to your request include material containing other government agencies' information which has been deleted. This information is annotated with "OGA" (Other Government Agency) and the name of the appropriate agency. The CIA has asked that we protect information pursuant to (b)(3), specifically Section 6 of the Central Intelligence Agency Act of 1949, 50 U.S.C. § 403g, as amended. The Department of the Air Force has identified material that was found to be currently and properly classified in accordance with Executive Order 13526. This information meets the criteria for classification as set forth in Subparagraph (a) of Section 1.4 and remains classified SECRET as provided in Section 1.2 of the Executive Order. The information is classified because its disclosure could

reasonably be expected to cause serious damage to the national security. Because the information is currently and properly classified, it is exempt from disclosure pursuant to the first exemption of the FOIA (5 U.S.C. Section 552(b)(1)).

Any appeal of the denial of the other agencies' information should be directed to the appropriate agency.

Sincerely,

Paul K
for

JOHN R. CHAPMAN
Chief, FOIA/PA Office
NSA Initial Denial Authority

Encls:
a/s

From: donotreply@nsa.gov
Sent: Friday, November 15, 2013 4:53 PM
To: donotreply@nsa.gov
Cc: john@greenewald.com
Subject: FOIA Request (Web form submission)

Name: John Greenewald

Email: john@greenewald.com

Company: The Black Vault

Postal Address: [redacted]

Postal 2nd Line: None

Postal City: [redacted]

Postal State-prov: [redacted]

Zip Code: [redacted]

Country: United States of America

Home Phone: [redacted]

Work Phone: [redacted]

Records Requested: To whom it may concern,

This is a non-commercial request made under the provisions of the Freedom of Information Act 5 U.S.C. S 552. My FOIA requester status as a "representative of the news media" however due to your agency's denial of this status, I hereby submit this request as an "All other" requester.

I hope a full fee waiver for this request can be considered, because all documents received will be available FREE OF CHARGE in their entirety on http://www.theblackvault.com. This site, run entirely by me, has been around for 17 years, and literally served more than 8,000 people a day on average. I have a unique way of disseminating this information, and can offer additional details, if needed. If a full fee waiver is denied, I please ask you contact me with a quote on how much fees will be.

I prefer electronic delivery of the requested material either via email to john@greenewald.com or via CD-ROM via postal mail. Please contact me should this FOIA request should incur a charge.

I respectfully request a copy of the Intellipedia entry for (from all three wikis that make up the Intellipedia):

CORONA

Thank you so much for your time, and I am very much looking forward to your response.

Sincerely,

John Greenewald, Jr.
[redacted]

(U) CORONA

~~SECRET//TK~~

You have new messages (last change).

(U) CORONA Film, Measurements:3.25", DIA:6.5"

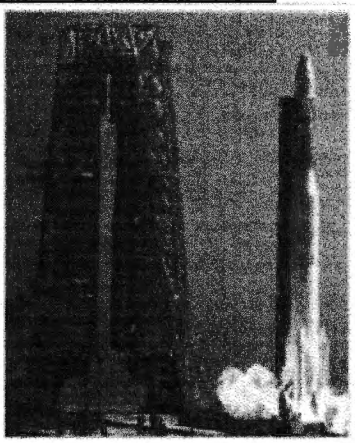
(U) **CORONA**, America's first successful photoreconnaissance satellite, revolutionized the collection of intelligence in the 1960s. The requirement for intelligence regarding Soviet strategic weapons systems and installations dramatically increased after 1 May 1960 when the Soviets downed an American U-2 aircraft and captured its CIA pilot Francis Gary Powers. CORONA's first successful mission just two and a half months later provided, in one mission, more photographic coverage of the Soviet Union than all previous U-2 missions. Satellite imagery is used for a variety of analytical purposes from assessing military strength to estimating the size of grain production. Its greatest utility during the Cold War was to monitor the deployment of Soviet strategic forces and to verify compliance with arms control agreements.

Contents

History

(U) The 1950s had been a time of great uncertainty for the US Intelligence Community. The dearth of useful intelligence was worst with regard to the Soviet Union's nascent strategic nuclear forces. Although the Soviets were known to have ambitious programs to develop and deploy intercontinental-ranged missiles and bombers, little was known about the scope or success of these efforts. There was plenty of evidence of Soviet missile test programs, and sightings of Soviet strategic bombers were frequent, but there was no way to get a comprehensive look at overall Soviet strategic deployments--no one knew how many operational ICBM's or bombers the Soviets had or where they were deployed. National Intelligence Estimates reflected this uncertainty in wild overestimates of Soviet bomber and missile production--known subsequently as the "bomber gap" and the "missile gap"--in which it was forecast that the United States was falling behind in the nuclear arms race and in real danger of nuclear attack. Project AQUATONE--24 U-2 reconnaissance missions over the Soviet Union between 1956 and 1960--opened up a crack in the Soviets' armor, but it was a small one and it closed before an ICBM base could be found. AQUATONE was halted when Francis Gary Powers' U-2 was shot down near Sverdlovsk on 1 May 1960.

(U) Hand-in-hand with America's nascent ICBM program was the development of the USAF's space satellite program which first stood up as the **Western Development Division** in Inglewood, California on 1 July 1954, and developed its first satellite, the **WS 117L** in 1956: in 1958 the WS-117L was renamed "Project Corona". On 29 October 1956 the USAF awarded a contract to Lockheed for the WS-117L program, an outgrowth of a RAND study issued earlier that year (26 June 1956) titled "Physical Recovery of Satellite Payloads" which recommended film recovery. Within a month of awarding the contract the requirement for a reconnaissance satellite system was clearly defined (27 NOV 56), and the Pentagon approved the operational requirement four months later (March 1957). By early March 1957, inventor Merton Davies sparked competition and development of first Corona camera when, based on findings from Fairchild using cameras on drones, he proceeded to develop a spin-pan camera to attach to a satellite.



A CORONA satellite launch from Vandenberg AFB

(U) However, the first successful U.S. satellite launch occurred on 31 January 1958 when the **Army Ballistic Missile agency** used a modified **Redstone** rocket, dubbed the **Jupiter-C**, to send **Explorer 1** into orbit.[1] Atlas began as the first U.S. intercontinental ballistic missile. At the same time the Atlas was being developed as an ICBM, the Air Force began supplying the vehicles to NASA for space applications. In 1958, the first communication from space was broadcast from an orbiting Atlas with a recorded Christmas message from President Eisenhower. Atlas went on to become a workhorse in the U.S. space program, successfully launching numerous government, military, and civilian payloads.[2]

- (U) **28 February 1958**: President Eisenhower endorsed the film recovery satellite program (which became CORONA).
- (U) **10 March 1958**: WS-117L's secret film recovery satellite Program IIA was renamed "Project Corona."
- (U) **3 December 1958**: Press release provided cover for the CIA's secret Corona program, disassociated it from the Air Force WS-117L program, and attributed development and future launches to the Discoverer series for scientific exploration until the program was declassified.
- (U) **21 January 1959**: On-pad failure of the first attempt to launch a CORONA satellite into orbit.
- (U) **1 May 1960**: Francis Gary Power's U-2 reconnaissance plane was shot down by a Soviet SA-2 missile near Syerdlovsk, U.S.S.R.

(U) The USAF launched the **Discoverer I**, the first object intended for a polar orbit on 10 August 1960. The Discoverer series became the "scientific cover" under which the CORONA program developed. The U.S.

[redacted]

(b)(3) - P.L. 86-36

launch successes, together with the termination of U-2 airborne surveillance operations over the U.S.S.R., fueled the U.S. vision for a space reconnaissance program. On 22 June 1960, the U.S. Navy (USN) launched the first successful reconnaissance satellite, an ELINT vehicle developed by the Naval Research Laboratory (NRL): the **Galactic Radiation and Background (GRAB)**, was designed to collect Soviet electronic intelligence and orbited for several months. Two months later, the CIA and USAF succeeded with their jointly managed Corona program when the first photo reconnaissance film was returned and recovered from space. The summer successes of 1960 signaled the beginning of space reconnaissance.[3]

(U) Fortunately, the first CORONA mission to return imagery from space on 18-19 August 1960 (the parachute-retarded capsule ejected from the Discoverer XIV was "captured" in mid-air by a USAF C-119) produced more imagery than all the U-2 overflights put together. The first CORONA shots were grainy and of limited utility, but resolution improved rapidly and, with it, intelligence value. The few Soviet ICBM launchers were identified immediately and within a few months both the missile and bomber gaps were shown to be illusory--the Soviets were in fact significantly behind the United States in development of a workable ICBM--although the gap was closing. The Soviets were also building up a strategic bomber force--based on the Tu-95 turboprop heavy bomber--but were devoting most of their resources to missile production. At a stroke, satellite photography had eliminated the dilemmas that had haunted the Intelligence Community for a decade.

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(b)(1)
OGA

Dept of Air Force

- (U) **7 December 1960**: USAF launched Corona Mission 9013, the first successful mission with KH-2 camera.
- (U) **30 August 1961**: USAF launched Corona Mission 9023, the first mission with a KH-3 camera.
- (U) **Septemer 1961**: Publication of NIE-11-8/1-61, based on Corona imagery, confirmed that Soviet missile production lagged far behind the estimates originally forecast in an August 1958 National Intelligence Estimate (NIE)- the basis for the so-called "missile gap" betweent the U.S. and U.S.S.R.

~~(S//TK)~~ [redacted]

(U) By about 1970 the analytical success wrought by CORONA did have a drawback. The National Intelligence Estimates were relying perhaps too much on satellite photography. Details of current missile production were being emphasized at the expense of estimative intelligence of long-range Soviet strategic programs. Focusing on "observables," the NIEs failed to look more than two to three years into the future, with the result that they were always catching up to Soviet programs. This led to criticism of the NIEs, which were seen as underestimating the pace of Soviet strategic force programs, much as they had overestimated them in the previous decade. Fortunately the Strategic Arms Limitation Treaty (SALT) in 1971--which put a cap on Soviet missile launchers--limited reasoned speculation about the size of Soviet nuclear forces. Analysis shifted to technical characteristics of deployed forces and to the modernization of older systems. With the resolution of satellite cameras continuously improving, analysts could monitor changes in the size and characteristics of missile launchers, bombers, submarines, and imagery became the mainstay of the arms control verification process, even as it remained the single most important source for Soviet strategic forces NIEs.

Contributed by ..... (b) (3) OGA CIA

Relation to Other Systems

(U) By coincidence, CORONA returned its first pictures soon after the initial success of the GRAB system, the first signals intelligence satellites, which had its inaugural launch on 22 June 1960. GRAB was soon succeeded by POPPY in 1962; together they helped give rise to System 7100 and gave US intelligence a space-based signals monitoring capability to supplement the information provided by the CORONA system.

Significance for US Intelligence

(U) The success of CORONA and other overhead reconnaissance programs put an end to the speculative intelligence of the early cold War, and revolutionized intelligence on Soviet strategic forces. Of the images sent down by the early CORONA satellites, none were more important than the first glimpses of Soviet ballistic missile sites. These provided hard evidence of the pace and scope of missile deployments and contributed to the stability of the nuclear balance. Over 1960s, coverage regularized and the quantity and quality of the imagery improved, enhancing the precision and the detail with which the Intelligence Community was able to report on the USSR's strategic capabilities. The importance of this new source was reflected in the National Intelligence Estimates (NIEs), which increasingly became compendia of information on Soviet strategic forces.

(b) (3) - P.L. 86-36

Systems in the CORONA Program

(U) **CORONA** refers to 145 satellites split into the following systems:

- ~~(S//TK)~~
- ~~(S//TK)~~
- ~~(S//TK)~~

(b) (1)
OGA

Dept of Air Force

REFERENCES

1. ↑ (U) National Reconnaissance Almanac, July 2010, published by the Center for the Study of National Reconnaissance; Chapter 1 "The Concept and Origins of Reconnaissance", page 5; accessed 29 NOV 2011.
2. ↑ USAF classified, quarterly publication **SPACE SENTINEL**, Winter 2003; "Behind the Scenes With Space Launch", page 21; Overall classification is S//TK//NF, but extracted information marked Unclass; accessed 29 NOV 2011.
3. ↑ (U) National Reconnaissance Almanac, July 2010, published by the Center for the Study of National Reconnaissance; Chapter 1 "The Concept and Origins of Reconnaissance", page 6; accessed 29 NOV 2011.