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DEPARTMENT OF THE NAVY
NAVAL RESEARCH LABORATORY
4665 OVERLOOK AVE SW
WASHINGTON DC 20375-5326

IN REPLY REFER TO

5400
Ser 8013/226
22 September 97

From: Commanding Officer, Naval Research Laboratory
To: Director, National Reconnaissance Office, Keith Hall
Via: Program Manager, Captain Rand Fisher
Subj: DECLASSIFICATION OF DYNO PROGRAM (~~S/BYE~~)
Encl: (1): NRL's Diamond Jubilee Background (U)

1. (U) As described in Encl. (1), The Naval Research Laboratory will be celebrating its 75th anniversary in June of 1998. The laboratory will be hosting three days of events to recognize the contributions of the laboratory to the Navy, DOD, and the Nation. Luminaries of the scientific and technical community will participate along with leaders in government and industry. Major contributions of the laboratory in three areas will be recognized. They are:

- a. Materials
- b. Space
- c. Naval systems

2. (~~S/BYE~~) One of the most significant contributions by NRL in the space area is the conception, development, launch and operation of the USA's first reconnaissance satellite. This was DYNO 1, launched on 22 June 1960 from Cape Canaveral, Florida aboard a Thor-Able-Star launch vehicle. DYNO 1's purpose was to collect ELINT data from the interior and infrequently covered maritime regions of the USSR. Security was provided by adding an NRL scientific cover experiment designed to make measurements of solar activity in X-ray, Lyman-Alpha, and ultraviolet radiation above the earth's atmosphere. This cover experiment became the first of a series of SOLRAD satellite experiments designed and exploited by the Naval Research Laboratory.

3. (~~S/BYE~~) In the interest of openness that the NRO has been fostering over the past several years, the NRL believes it is natural and appropriate that the next step would be to declassify this country's first ELINT satellite. The 75th anniversary of NRL would be an excellent opportunity and forum for the declassification and announcement of this significant achievement in the country's infant space program. If this declassification is approved, We invite you to personally announce the declassification at the Diamond Jubilee.

CL BY: [REDACTED]
CL REASON: 1.5 (c)
DECL ON: X1
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4. (S//NF) Two DYNO satellites were orbited before the establishment of the NRO and the deployment of the subsequent satellite series which was code-named POPPY or [REDACTED]. We are requesting that the DYNO series be declassified and announced. DYNO 1 achieved orbit on June 22, 1960, and DYNO 2 achieved orbit on June 29, 1961. The Pre-NRO DYNO series provides a convenient announcement and declassification platform in that it was an Office of Naval Intelligence (ONI) sponsored program with program directorship assigned to the Director of Naval Intelligence (DNI) and participation by the Naval Security Group (NSG), the National Security Agency (NSA), the Air Force Security Service (AFSS), the Central Intelligence Agency (CIA), and the Army Security Agency (ASA).

5. (U) It should be noted that within the last year, the relationship between NRL and the NRO has been announced publicly with the NRO announcing the partial sponsorship of the Tether Physics Satellite (TIPS) built and operated by NRL and the Interim Control Module (ICM) which is utilizing salvaged hardware from the NRO sponsored Titan Launch Dispenser (TLD).

6. (S//NF) Mr. Reid D. Mayo of NRL originated the concept of the DYNO ELINT satellite in early 1958. Messrs. Howard O. Lorenzen and [REDACTED] expanded the concept and coordinated with other organizations to provide for multi-agency participation and the use of SIGINT stations for data collection and forwarding of data to NSA for processing and product dissemination. RADM Reed of ONI advanced the NRL proposal through the Navy, ARPA, DOD elements, and the executive branch to secure presidential approval.

7. (U) The NRL would be able to provide all background information, including technical and policy directives from its archives. We would provide staff support to retrieve and process this information and participate in the process necessary to gain approvals for declassification. NRL could also provide publications and public affairs support if needed.

8. (U) Please let us know if this request meets with your approval and if so, how we should proceed.


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The Naval Research Laboratory, the U.S. Navy's corporate laboratory and one of the federal government's leading scientific centers, will be celebrating its diamond jubilee in 1998. The focus of next year's celebration is the Laboratory's many contributions to the Navy and the nation during its seventy-five year history. NRL is requesting a Presidential Proclamation to help mark this important milestone in the Laboratory's history.

NRL officially opened on July 2, 1923, as recommended by of Thomas Alva Edison and the Naval Consulting Board. A modern industrial-type research facility was to be established for the Navy. In the Laboratory's subsequent seven decades, research efforts have expanded from the two original areas of scientific endeavor, radio and underwater sound, to 19 broad areas that encompass many diverse fields in science and engineering.

Early NRL research achievements were manifold. They included the discovery and explanation of radio skip distance (the foundation of modern wave-propagation theory); the development of the fathometer and early sonar; and numerous contributions to the technology of high-frequency radio communications. The Laboratory holds the first U.S. Patent in Radar (1934).

During World War II, scientific activities concentrated almost entirely on applied research. Ship's electronic countermeasures were devised, the first application of cryptography in radar identification was used, the U.S.'s first Identification Friend or Foe (IFF) radio system, and an innovative method of producing uranium (U-238) were developed.

The postwar era was a time of great expansion for NRL. The Laboratory added to its prewar research program with the introduction of bold new programs in electronics, nuclear studies, optics, materials chemistry, space science and other fields.

NRL pioneered naval research into space from atmospheric probes with captured German V-2 rockets. Successive work included the direction of the *Vanguard* project America's first satellite program -- through such recent projects as the Navy's Global Positioning System and the 1995 *Clementine* moon mission. Additionally, NRL pioneered the transmission of radio signals off the moon using the world's largest parabolic antenna -- a first step toward satellite communications. Since the late 1950s, Laboratory scientists have designed, built and launched more than 80 satellites.

NRL's Laboratory for the Structure of Matter has become internationally famous for its path-breaking work in using electron and x-ray diffraction methods for understanding the structure of complicated organic molecules. NRL's Dr. Jerome Karle received the 1985 Nobel Prize in Chemistry for his research to determine phase information from x-ray diffraction patterns.

Today's Laboratory carries out research from the ocean deeps to the depths of space and from the structure of matter to the frontiers of modern computing. Current research includes studies as diverse as the monitoring of the solar corona and its impact on the Earth's atmosphere, biomolecular engineering, artificial intelligence, remote sensing, the oceanic climate, virtual reality and superconductivity.

The results of these research programs have been quickly transitioned into naval systems and to industrial technologies that help make the U.S. Navy and the U.S. industry world leaders. NRL continues to meet its assigned task of bringing the best of modern science and technology to the Navy, making U.S. sea power the best and technologically most advanced in the world.

~~Enclosure (1) To
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