



NATIONAL RECONNAISSANCE OFFICE

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DNRO Bruce Carlson's Remarks at GAMBIT/HEXAGON Transfer to AF Museum Ceremony As prepared for delivery Air Force Museum, Dayton Ohio 26 Jan 2012

Since it was formed in September 1961, the National Reconnaissance Office (NRO) has always enjoyed a close relationship with the Air Force. Obviously we currently maintain that close relationship since an old washed-up Air Force fighter pilot is the current Director and an Air Force two-star general is its Deputy Director.

At its inception, the NRO was jointly directed by Air Force and CIA officials. In those early days, the NRO operated out of the Pentagon and had four program offices, to include Program A which managed Air Force satellite reconnaissance efforts out of a Los Angeles location.

The alpha programs (A, B & C) existed until December 1992 when the NRO replaced them with functional directorates, such as Imagery Intelligence, Signals Intelligence, Communications and Space Launch. In order to facilitate this change and to consolidate operations in Chantilly, Virginia, the NRO was publicly acknowledged in September 1992.

For more than 30 years prior to that, the men and women of the NRO completed their mission in secrecy and little was known about the organization. In 1995, President Clinton authorized the declassification of the NRO's first imagery satellite, CORONA and the world was able to marvel at the innovative and technological accomplishments of this organization.

With CORONA and its 40-foot resolution, the United States was able to determine the pace and scope of the Soviet Union's ballistic missile deployments and analysts were able to count Soviet heavy bombers – however better resolution was required for more detailed analysis

As a part of the NRO's 50th Anniversary last year, which included the launch of six new satellite systems in only seven months, we were also able to declassify the NRO's last two film-return imagery satellite systems – GAMBIT and HEXAGON.

The first of those systems, GAMBIT 1 with its KH-7 camera system that included a 77-inch focal length camera was launched in July 1963 and operated until June 1967 with a total of 38 missions averaging about a week each in length. The KH-7 was a huge leap forward and the imagery was even better than manned reconnaissance photography.

GAMBIT I had thin film which permitted longer missions than CORONA and its roll capability and stereo cameras enabled increased target acquisition and gave images a three-dimensional quality.

GAMBIT I had a resolution of four feet and monitored key targets and provided key cartographic information that allowed the Department of Defense to produce accurate, large-scale maps – making an important contribution to the war in SouthEast Asia, providing forward air controllers accurate maps from which to direct air strikes.

The follow-on system, GAMBIT 3 flew 54 missions from July 1966 to April 1984 and it had a KH-8 camera system with a 175-inch camera which provided resolution that was better than 2 feet.

Like Gambit 1, GAMBIT 3 and its KH-8 played an important role in National Security. As an example, one of the images on display today is of the Tyuratam Missile Test Center.

Tyuratam Missile Test Center, which is located in Kazakhstan, is also known as the Baikonur Cosmosdrome and it is the site where the space age began, with the Soviet Union's launch of the Sputnik satellite in October 1957. In addition to other notable launches, it was also the launch site for Yuri Gagarin's flight in 1961 as the first human in space.

The image we have on display is a launch complex on Tyuratam. And this particular site is extremely notable since images taken by Gambit confirmed this as the site where the Soviet Union was working on a space vehicle to go to the moon. At the time, the Soviet Union denied any intentions of taking part in a "race to the Moon" with the United States, however, imagery in the hands of our national leaders proved otherwise.

The Soviet's attempt to launch a space vehicle to the moon failed catastrophically on 3 July 1969, just days before Neil Armstrong set foot on the moon. Many of you will recall just where you were and what you were doing when you got that news.

While GAMBIT's imagery was very detailed, it could be compared to looking at a map through a soda straw. To work in concert with GAMBIT, HEXAGON was developed to provide a broad-area high-resolution search and mapping capability – carrying 60 miles of film on each of its 19 total missions from June 1971 to April 1986.

HEXAGON was one of the largest and most complex satellites ever built. Nicknamed "Big Bird" it was 10 feet in diameter and 55 feet in length – rivaling NASA's Space Lab in size.

HEXAGON had multiple film recovery buckets and extended missions up to 120 days – improvements which moved the United States closer to achieving a continuous space imaging capability.

One HEXAGON frame covered a distance of more than 400 miles or about the distance from Cincinnati, Ohio, to Washington D.C.

At the time, the Soviet Union encompassed an area of almost 7 million square miles and HEXAGON would image about 80 percent of this area, cloud-free, on a typical mission. Because of its capability to monitor Soviet research and development, production and deployment of strategic weapons, HEXAGON made the first SALT Treaty possible in 1972.

HEXAGON also provided economic intelligence on Soviet heavy metal production, oil and natural gas exploration, nuclear production and conventional electrical power capacity – it also photographed Soviet grain growing regions allowing accurate U.S. predictions on Soviet grain production.

Working together, GAMBIT and HEXAGON proved invaluable to U.S. policymakers and were the heart and soul of our treaty monitoring and nuclear targeting efforts. These systems provided detailed information on Soviet strategic weapons development. Any new Soviet ICBM complex or development, was quickly detected; while construction of nuclear submarines, aircraft, naval vessels or antiballistic sites and Soviet ballistic missile launchings were all carefully monitored by America's Eyes in Space

It's also useful to consider that these remarkable machines were conceived, designed, and in most cases built before the laptop or desk top computer at a time when manual typewriters, slide rules, 45 RPM vinyl records, home delivered glass-bottled milk were all still the leading edge of technology.

Built by the NRO and its team members the USAF, the CIA and Industry, GAMBIT and HEXAGON were the heart and soul of this nation's space reconnaissance effort during the Cold War. As such, the Museum of the United States Air Force is certainly the appropriate place to showcase these national treasures.