RAF Boeing E-3D
Sentry AEW1

COSMOS 389 ELINT

This 1982 work shows the Cosmos 389 satellite, which was launched in December 1970 and performed electronic intelligence (ELINT) missions. Cosmos 389 was the first in a series of 'ferret' satellites that pinpointed sources of radar and radio emissions to identify air defence sites and command and control centres. Transmitted to ground stations, the data was used for Soviet targeting and war planning.

BRIAN W. MCMULLIN

configured for ELINT operations. This aircraft was searching for the new German secret weapon system known as *Knickebein* (crooked leg) which was a long range blind bombing system. At the heart of the British airborne ELINT system was a new radio receiver developed by the American company known as Hallicrafters. This was the Hallicrafters S-27 receiver.

Many other advancements in electronics resulted in the use of video camera systems

employing the Iconoscope camera tube (television) in remotely piloted aircraft, primarily bombers of the allies, such as the B-17 and the B-24. From these developments we saw the use of video systems enter the world of intelligence gathering. These systems expanded the realms of photographic reconnaissance performed by "recon" aircraft. We also saw the increased use of airborne ELINT systems employed by the Allies along with Germany and Japan. The use of ELINT aircraft was employed in the search of the Pacific to

determine how many types of radar the Japanese had and where they were located. This was brought about by the unexpected discovery of the Japanese Mark I Model I early warning radar when US Marines stormed ashore to capture Guadalcanal on 7 August 1942.

The Cold War between the Soviet Union and the West produced great advances in intelligence gathering. The development of the digital computer and mighty rockets to propel ICBM's around the world led to the development of the satellite. The digital computer has been a significant entity in the advancement of intelligence gathering and analysis. The use of techno-intelligence came into its own during the Cold War, when ships, aeroplanes, submarines, ground locations, and satellites were used to further intelligence interests. Most of these efforts were directed at intercepting electronic data, including radar signals, missile telemetry, and electromagnetic pulses from devices and nuclear explosions. Better known as SIGINT (signals intelligence) and ELINT (electronic intelligence) systems, these efforts also include the interception of communications for intelligence purposes.

A few years after Sputnik One was fired into space, we began to see the launching of true spy satellites, by both the West and Soviets, producing tremendous volumes of intelligence. The earliest spy satellites employed film cameras that required their recovery and processing from the space craft. The advent of digital systems removed the problem of recovery and produced vastly superior intel products. We now have spacecraft with SIGINT and ELINT systems plus the varied imaging systems. Some of these satellites feature a vacuum cleaner-like ability to "suck up" a tremendous broad band of frequencies used for all forms of communications, such as cell phones, land-line phone systems where they are linked by microwave relay sites, Internet communications, satellite phone systems, etc.

We now have systems employing the full spectrum of light, i.e. visible, IR, UV, X-ray, etc. The LASER has also brought great advances to the field of intelligence collection, along with the MASER. The word MASER stands for Microwave Amplification by Stimulation Emission of Radiation. A LASER is a MASER that works with higher frequency photons in the ultraviolet or visible light spectrum.

As all forms of electronic technologies evolve we can see an obvious progression towards gathering intelligence at even quicker speeds. What then for the next decade?

Those involved in this field sometimes endeavour to try and visualize what our techno-

intel capabilities will be able to accomplish fifty years from now. Having personally seen and experienced many great accomplishments in the field of electronic intelligence gathering since the beginning of World War II, one can only guess at what may be common place in the year 2050.

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Undersea ELINT: The Russian nuclear-propelled icebreaker ROSSIYA, complete with weapons and military electronics. During the Cold War, nuclear icebreakers provided a link between Soviet communication nets and submerged submarines.

ABOUT THE AUTHORS

CHUCK MCCORVEY, SR. is a published author of non-fiction and fiction works. He entered the intelligence field in the summer of 1959 with the National Security Agency. This assignment was part of the U-2 overflights of the Soviet Union out of Adana, Turkey. After retiring in 1985 as an intelligence operative, he entered the corporate world by creating and establishing the AOE International Corporation. He is an electronics engineer with more than forty years experience in electronic warfare, cryptography, and intelligence gathering. In 1990, he created the GIA Group, an organisation involved in Intel gathering, training of covert operatives for the law enforcement world, and other services involving electronic Intel services. His GIA Group also manufactures intelligence gathering systems and is very active today, with operatives working in Southeast Asia and the Middle East. Chuck has lectured throughout the world to many governments, intelligence agencies and major multi-national corporations' corporate and IT security leaders. *LINKS:* www.eagleslair.us

KEROP B. GOURDIKIAN is an intelligence operative with both field and analytical skills. His diverse linguistics include, but are not limited to, his being fluent in the Arabic, Armenian, French, Turkish, and English languages. He has many years of experience working in the Middle East, the Caucasus region and Southeast Asia and is also extremely knowledgeable of Armenian politics, (both political persuasions), Russian foreign and domestic politics, Middle East politics (Israel and the Arab World). His knowledge of and experience in the Caucasus region includes Azerbaijan, Georgia, Armenia and the North Caucasian republics of the Russian Federation is extensive. Kerop has worked with GIA in intelligence since 1990 and is now a director of the organisation. He has operated in more than thirty-five countries in Europe, the Middle East, and Southeast Asia. Kerop has extensive knowledge and experience in the narco-terrorism world. His experience in this field has been directed primarily in the South American, Southeast Asia and the Afghan-Pakistan areas of the narcotics producers. *LINKS:* www.strategicintelforum.com

GRAB II
Elint Satellite

The GRAB II (Galactic Radiation And Background) satellite and the Poppy satellite depict two of the earliest signals intelligence satellites to be launched by the US Government. The first GRAB satellite was launched on 22 June 1960 following the loss in May of the U-2 spy plane flown by Gary Powers. The successful launch of the GRAB II satellite occurred on 29 June 1961.

The GRAB satellites had a dual mission. The *unclassified mission,* from which the satellite earned its name, was to gather solar radiation data. The *secret mission* involved the signals intelligence package carried aboard the satellite. It gathered radar pulses within a specific bandwidth from Soviet equipment.

The data was then downloaded to ground stations, recorded on magnetic tape, and couriered to the NRL, whose engineers had designed and built GRAB. Following initial analysis, the tapes were duplicated and sent to Strategic Air Command and the National Security Agency (NSA). Based on the information NSA received, analysts determined that the Soviets had radars that supported the capability to destroy ballistic missiles.

In 1962, the new National Reconnaissance Office (NRO) took over NRL's Electronic Intelligence (ELINT) satellite activities, and on 13 December 1962 launched Poppy 1. NRO launched six more Poppy satellites into orbit throughout the 1960s and into the 1970s. The satellites grew in size from a modest 20x24 inches and 55 pounds to 27x34 inches and 282 pounds.

Like GRAB, Poppy transponded ELINT data to ground stations. Operators and cryptologic technicians from the military services recorded information and signals of interest and reported them to NSA. NSA in turn analysed the information and produced reports for the Intelligence Community.

The GRAB and Poppy programs dramatically increased the capability of the US Intelligence Community to acquire ELINT data deep within the Soviet Union and supported a wide range of intelligence capabilities.

Courtesy: NSA

AMERICA'S FIRST INTELLIGENCE SATELLITE