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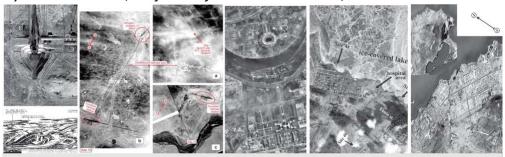
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Open Skies for National Security

by Mike Gruntman, Professor of Astronautics at USC, astronauticsnow.com



Open Skies for National Security

Sixty years ago, dramatic events closed one Cold War chapter and opened another in keeping skies open for overhead reconnaissance. Peacetime monitoring of adversaries has proved essential for avoiding war and remains indispensable today.

On April 9, 1960, an American reconnaissance U-2 plane took off from an airfield in Peshawar, Pakistan. The aircraft crossed the border of the Soviet Union, flew over and photographed nuclear and missile test sites, and then safely returned and landed at Zahedan in Iran. Soviet leader Nikita Khrushchev was indignant that the new "antiaircraft [guided missile] batteries had been caught napping and did not open fire soon enough." He reprimanded a number of officers.

Only three weeks later on May 1, 1960, a Soviet surface-to-air missile S-75, known in the West as SA-2 and Guideline, brought down a U-2 plane piloted by Francis Gary Powers over the Ural mountains. Powers bailed out from his aircraft damaged by an explosion of the missile nearby. A second missile then directly hit his falling down plane. This was the 24th U-2 flight over the Soviet Union. American President Dwight D. Eisenhower promptly ordered termination of the intrusions.

Development of long-range ballistic missiles and nuclear weapons threatened devastating consequences should the Cold War turned into a full-scale military conflict. New technologies allowed no time for preparation for hostilities and mobilization which made monitoring military developments and posture of the adversary a key to avoiding a fatal miscalculation and hence reducing the risk of war.

In the wake of the Powers incident, Eisenhower explained at a press conference: "No one wants another Pearl Harbor ... Secrecy of the Soviet Union makes this [aerial reconnaissance] essential. In most of the world no large-scale attack could be prepared in secret but in the Soviet Union there is a fetish of secrecy and concealment."

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Four years earlier at a summit of the Big Four powers in Geneva in July 1955, President Eisenhower proposed the "open skies" plan based on reciprocal aerial overflights of the American and Soviet territories. Khrushchev rejected the proposal. Then Eisenhower made peacetime overhead reconnaissance of the denied areas a national policy and authorized U-2 overflights. The planes first flew over Leningrad (today's St. Petersburg) and Moscow on July 4 and 5, 1956, respectively. Soviet radars detected the high-altitude U-2s, but air defenses could not stop them yet.

U-2 photo of Moscow 57 July 1956

**Home of Moscow 57 July 1957

**Home of Moscow 57 July 195

U-2 photograph of Moscow at http://astronauticsnow.com/fip/fi_p_078.pdf More on the U-2 program at http://astronauticsnow.com/u2/

In mid-1950s the United States initiated the next step in photoreconnaissance development, the satellites that became known as Corona. This program was the primary the national-security-focused objective of space Eisenhower administration. Space reconnaissance would rely on universal acceptance of freedom of space, that is the right of satellites to fly over other countries. Consequently, President Eisenhower approved putting into orbit a scientific satellite (Vanguard) first in order to demonstrate the right of overflight by spacecraft. Ironically, it would be the Soviet artificial satellite Sputnik, with no country objecting its orbiting the Earth, that made in October 1957 the principle of freedom of space a tacit "common-law" reality.

The U-2 overflights played a key role in accurate assessment of the Soviet military threat. In particular the missions revealed that the feared "bomber gap" with the Soviet Union did not exist. They also showed the

growing air defense capabilities that would bring the program to an end in May of 1960.

Many technical challenges and setbacks marked development of the top-priority Corona satellites, disguised as the civilian Discoverer program. Only on its fourteenth flight attempt in August 1960 the spacecraft completed its full mission with all film exposed and transferred to a recovery capsule, which reentered the atmosphere where a C-119 plane captured it in air. This single mission photographed a larger Soviet territory than all prior U-2 overflights of the Soviet Union combined. The photographs confirmed absence of a new threatening ballistic "missile gap" between the superpowers, a contentious and politicized topic of the presidential election campaigns of John Kennedy and Richard Nixon.



Corona photographs of Saryshagan Test Site at http://astronauticsnow.com/fip/fi p 169.pdf http://astronauticsnow.com/bttp/btt p 407-408.pdf

Under direction of the National Reconnaissance Office the Corona program continuously improved its performance and remained operational until 1972, followed by next generations of optical space systems. Simultaneously, signals and electronic reconnaissance satellites provided complementary capabilities. The early open-skies vision of President Eisenhower was also implemented after the end of the Cold War, with more than thirty countries signing a treaty allowing occasional aerial overflights of their territories for military transparency.

Freedom of space keeps skies open for reconnaissance satellites to this day, vitally contributing to national security and making verifiable arms-control agreements possible. Protecting this "freedom of operation for the United States in ... space" is among main tasks of the new Space Force.

