

A History of NASIC

NATIONAL AIR AND SPACE INTELLIGENCE CENTER

WRIGHT-PATTERSON AIR FORCE BASE, OHIO

Rockets, Satellites, and NASIC's Role in Missile Defense

Contributing author Terry Hunt

Understanding a developing threat and testing and applying technical solutions is a fundamental aspect of the National Air and Space Intelligence Center (NASIC) mission. The Strategic Defense Initiative (SDI) created opportunities to work on applying capabilities associated with missile technical intelligence to the complex problem of missile defense. Projects in missile analysis, signature development, and threat projection were undertaken in partnership with other agencies and centers. I worked on several interesting projects that provide a snapshot of NASIC's work in this area.

The NASIC role in testing and development is not widely known. Launching sounding rockets, blowing up ordnance, and firing big guns doesn't sound like the kind of activities that NASIC is generally known for. A unique story is woven around the threads of several projects that helped our country understand and defend against missiles and apply remote sensing and other technical solutions for our nation's security.

NASIC has executed four ballistic missile flight test programs funded by the SDI and later the Ballistic Missile Defense Organization (BMDO), launching 9 separate rockets with a total of 19 stages of flight. Hundreds of payload objects have been deployed in space as ballistic targets for sensors to view and characterize. One test was a prototype to a whole new target class and yet another for a multilateral exercise. These efforts were launched from the newly formed Program Development Office in the former Technology Directorate. This office was the catalyst for many initiatives and programs that have since become routine business practices at NASIC.

The first and primary flight test program was called Red Tigress. Red Tigress was executed by the National Air Intelligence Center (NAIC, now NASIC) and was a cooperative flight test program with the United Kingdom. Red Tigress objectives included validating the predicted responsive threat to ballistic missile defense; understanding and characterizing reentry vehicles and penetration aids; and analyzing remote-sensing capabilities to detect, track, and characterize objects. The first successful flight test of the Red Tigress program was launched on 14 October 1991 from Complex 20 at Cape Canaveral Air Force Station, Florida. A single-stage ARIES booster carrying eight payloads was launched during an 8-minute window. The focus NASIC brought to such programs was to conduct flight tests executed explicitly for radar and electro-optical remote-sensing objectives.

Red Tigress II was the first launch program conducted under the sponsorship of the newly organized BMDO. This fact was heralded, in the midst of the launch campaign, across the headlines of *Florida Today* on 17 May 1993. The statewide newspaper's top of the page headline read, "Force still with 'Star Wars.'" The article went on to describe the two suborbital missions and the decision by then Secretary of Defense Les Aspin to continue research while scrapping the bulk of the strategic defense concepts previously put forth.

What is interesting in the series of stories in the state and local papers during the 2-month campaign is the extent to describe the purpose of the mission, while not a single mention of NASIC occurred. Two Red Tigress rockets were launched in May 1993 at an estimated cost of \$25 million. NAIC's role in executing the tests included contracting under the newly established Have Gold contract, funding range support and sensors, developing test plans, acquiring government-furnished rocket motors, testing and integration of classified payloads, remote sensor coordination during the test, and much more.

The success of Red Tigress II led to the creation of the Research and Development Branch of NAIC's Ballistic Missile Division. This new branch, supervised by Dale Rude, initiated a host of projects focusing on missile defense test targets. My first opportunity to lead



First Red Tigress II Vehicle on Launch Rail at Complex 20, Cape Canaveral, Florida in May 1993

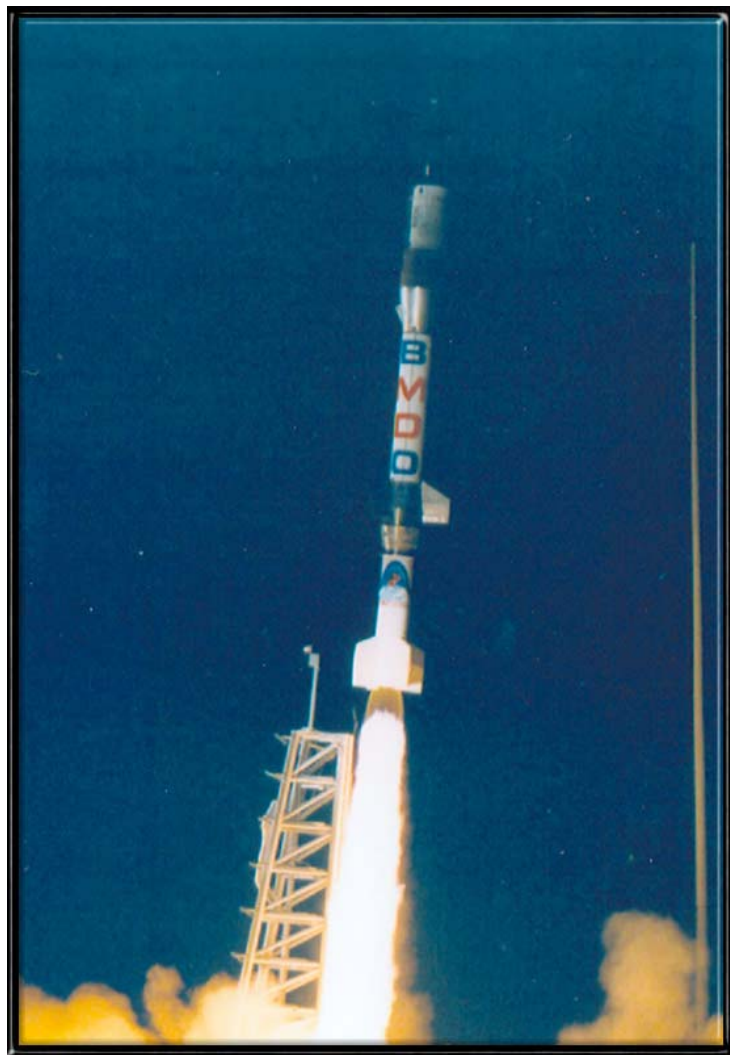


a project came with the Combined Experiments Program (CEP), which was initiated to address target requirements for the Midcourse Space Experiment (MSX) satellite. Plans were established for a Red Tigriss III mission and proposals were created for several other projects. Both CEP and Red Tigriss III continued our partnership with the United Kingdom, incorporating payload objects as targets for remote sensors. Both flight programs were conducted from the National Aeronautics and Space Administration's (NASA's) Wallops Island Flight Facility on the outer shores of Virginia.

A BMDO-approved press release, shortly after the two CEP launches, stated that the launches were designed to demonstrate the ability of space-based optical sensors on MSX to perform key missile defense functions, such as acquisition, tracking, and discrimination. The experiments were planned and executed by the MSX Cooperative Target Experiments Team under the direction of BMDO. "This experiment was a very significant first step in learning how to incorporate midcourse track data from a low Earth orbiting sensor into a missile defense system," said Dr. John Mill, MSX Project Scientist. The release went on to provide the first public disclosure of the role of NAIC by stating the "launches are managed by the National Air Intelligence Center located at Wright-Patterson Air Force Base, Ohio."

Another NAIC-executed project was called ALTAIR. Interestingly, in 1974, a mobile intercontinental ballistic missile (ICBM)—an all-up Minuteman II—was deployed from a C5A transport aircraft...while flying. The process involved extraction and descent parachute rigs. This concept resurfaced and was demonstrated as a possible target test vehicle. The ALTAIR airdrop target was deployed out of the back of a C-130 transport on an ejection sled at 15,000-foot altitude. The single stage Minuteman SR-19 rocket descended under a pair of main parachutes, until the parachutes separated at 5,000 feet, the designated launch altitude. The launch initiated successfully and the rocket ascended for some time; then the flight was terminated for range safety purposes. This project did provide a strong feasibility justification for BMDO. Today, several airdrop target programs are being conducted and sponsored by the successor to BMDO, the Missile Defense Agency (MDA).

As if rocket launches weren't interesting enough, my next assignment was Test Director for the Cobra Brass Program in the Directorate of Data Exploitation. Conducting individual tests were often more parochial than launching suborbital rockets, but the testing was broad in its scope. This developing mission area has led to more direct and time-sensitive support to warfighting commands and national customers. Analysis of electromagnetic signals provides unique and valuable intelligence. Developing new approaches to remote sensor applications for technical intelligence, such as precise metrics and signature analysis, logically leads to new capabilities for warfare and disaster response. Whether it's rockets, lasers, bombs, aircraft, or satellites, research and testing at NASIC provide unique opportunities for job satisfaction and support of our nation's security.



Red Tigriss II Launch before Dawn at Complex 20, Cape Canaveral, Florida in May 1993 (first launch test under newly named Ballistic Missile Defense Organization)