= High Virgo =

The High Virgo , also known as Weapons System 199C (WS @-@ 199C) , was a prototype air @-@ launched ballistic missile (ALBM) jointly developed by Lockheed and the Convair division of General Dynamics during the late 1950s . The missile proved moderately successful and aided in the development of the later GAM @-@ 87 Skybolt ALBM ; in addition , it was used in early test of anti @-@ satellite weapons .

= = Design and development = =

As part of the WS @-@ 199 project to develop new strategic weapons for the United States Air Force 's Strategic Air Command , the Lockheed Corporation and the Convair division of General Dynamics proposed the development of an air @-@ launched ballistic missile , to be carried by the Convair B @-@ 58 Hustler supersonic medium bomber . In early 1958 the two companies were awarded a contract for development of the weapon , designated WS @-@ 199C and given the code @-@ name " High Virgo " . While the project was intended to be strictly a research @-@ and @-@ development exercise , it was planned that the weapon would be quickly capable of being developed into an operational system if required .

The High Virgo missile was a single @-@ stage weapon , powered by a solid @-@ fueled Thiokol TX @-@ 20 rocket , and was equipped an advanced inertial guidance system derived from that of the AGM @-@ 28 Hound Dog cruise missile . Four tailfins in a cruciform arrangement provided directional control . The missile was developed by Lockheed , utilising components developed for several existing missiles in order to reduce the cost of the project , and also to reduce the development time required , while Convair was responsible for development of a pylon for carriage and launching of the missile from the prototype B @-@ 58 , the pylon replacing the aircraft 's normal weapons pod .

= = Operational history = =

Four test flights of the High Virgo missile were conducted ; due to development problems , the first two did not include the inertial guidance system , instead being fitted with a simple autopilot guiding the weapon on a pre @-@ programmed course . Launched from its B @-@ 58 carrier aircraft at high altitude and supersonic speed , the initial flight , conducted on September 5 , 1958 , was a failure when the missile 's controls malfunctioned ; the second test , three months later , proved more successful , with the missile flying over a range of nearly 200 miles (320 km) . The third flight test , the following June , utilized the inertial guidance system for the first time ; it , too , was a successful flight .

= = = Anti @-@ satellite test = = =

The fourth High Virgo missile was utilized in a test mission intended to demonstrate the capability of the missile for use as a " satellite interceptor " , or anti @-@ satellite missile (ASAT) . the missile , modified with cameras to record the results of the test , was initially targeted at the Explorer 4 satellite , but due to errors in calculating the satellite 's orbit Explorer 5 was targeted instead .

The ASAT test mission , the final flight of the High Virgo missile , was conducted on September 22 , 1959 ; less than a minute after the launch of the missile from its B @-@ 58 carrier aircraft at Mach 2 , the telemetry signal was lost . No data was recovered from the test , and the camera data , intended to be recovered afterward , was not located ; therefore the test was inconclusive .

No further test firings of High Virgo were conducted , the research project having been concluded . However the Air Force was already undertaking work on what would become the GAM @-@ 87 Skybolt missile , which incorporated lessons learned from the WS @-@ 199 project in its construction .

= = Launch history = =