

Martin XB-51 with Two

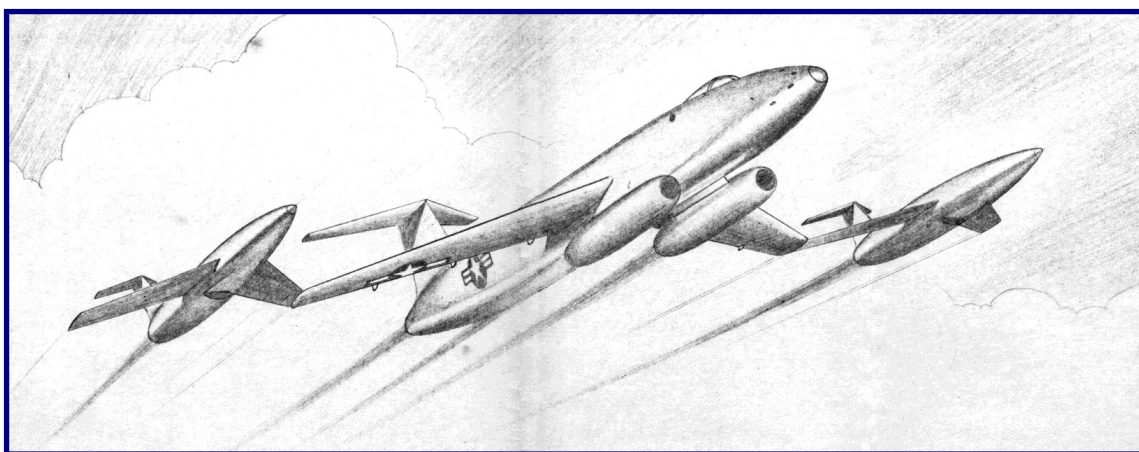
By: Tony R. Landis



Paths to the Present
FLASHBACK

MX-771 Matador Missiles

Aircraft manufacturers make every attempt to find alternate missions for their products to entice the Department of Defense to choose their vehicle over the competition. Most appear to a natural growth of an existing product, such as adding weapons to a trainer to create an inexpensive fighter, or adding bombs to a fighter for a ground attack mission. The Martin Aircraft Company was a bit more outlandish when they proposed using their new XB-51 medium bomber to carry two of their latest MX-771 Matador winged missiles, one on each wingtip, selling two products at one time.



Designed at the end of the World War II, the Martin XB-51 medium bomber attempted to capture the role that eventually went to the B-57. The tri-jet design made use of advanced features such as a variable incidence wing, rotary weapons bay and a rotating fairing for the tail-mounted engine for better long range cruise performance. The 2-person crew consisted of the pilot under a bubble canopy and a short-range navigation and bombing system (SHORAN) operator located below and behind the pilot. Pilot's that flew the aircraft stated it had the maneuverability of a fighter, and the SHORAN system provided good accuracy during bombing tests. Though the Air Force chose to go with the B-57 Canberra, both XB-51 aircraft continued flying for research purposes. Unfortunately, both prototypes



were lost to pilot error, the first crashed during unauthorized, low-altitude aerobatics on 9 May 1952, the second aircraft lost during takeoff from El Paso International Airport, TX on 25 March 1956.

The first Martin XB-51 medium bomber shown in the clear blue skies over Edwards AFB, CA. (AFTC History Office)

The Martin MX-771 Matador missile became the first operational surface-to-surface cruise missile for the United States military. First flown from White Sands Missile Range, NM, on 20 January 1949, the winged missile became operational in 1953 when the first two production vehicles were delivered to Eglin AFB, FL. During the course of its history, Matadors carried several designations including XSSM-A-1, SSM-A-1, B-61, TM-61 and finally MGM-1. Though the missile had the capability to carry a conventional 2,000 pound warhead, nearly all operational aircraft were armed with a W5 nuclear warhead. In addition to the United States, Matador missiles were stationed overseas at various locations in Germany, Korea, and Taiwan. The last missiles were removed from active service in 1962, with a total of 1,200 vehicles produced by Martin.



A colorful Martin Matador launches from the Eastern Test Range of the Air Force Missile Test Center, FL. The bright colors made the missile easier to track during test missions over the Atlantic Ocean. (AFMC History Office)



The concept of carrying smaller aircraft, or fuel carrying 'free-floating' panels on the wings, is known as wingtip coupling and was the idea of German scientist, Dr. Richard Vogt, who emigrated to the United States after World War II. The thought was that as long as the aircraft or panels were free to articulate and support themselves, there would be little drag penalty on the host vehicle. Initial testing of the concept was done in 1949 at Wright Field, OH, through the use of a Douglas C-47A host aircraft and a small Culver Q-14B Cadet target plane. With the success of



this project, the Air Force moved on to larger aircraft under Project Tip-Tow making use of an EB-29A host aircraft and two, modified EF-84D jet fighters. Later, using a Convair JRB-36F with two RF-84F fighters under Project Tom-Tom. Though testing showed some promise, the risks were too high, and the Air Force terminated further testing.

The small Q-14B Cadet attached to the right wing of the C-47A host aircraft during testing out of Wright Field, OH (Above, left).

A pair of EF-84D fighters mated to the EB-29A in this 1979 artwork by Edward Kirk. (AFMC History Office— both)

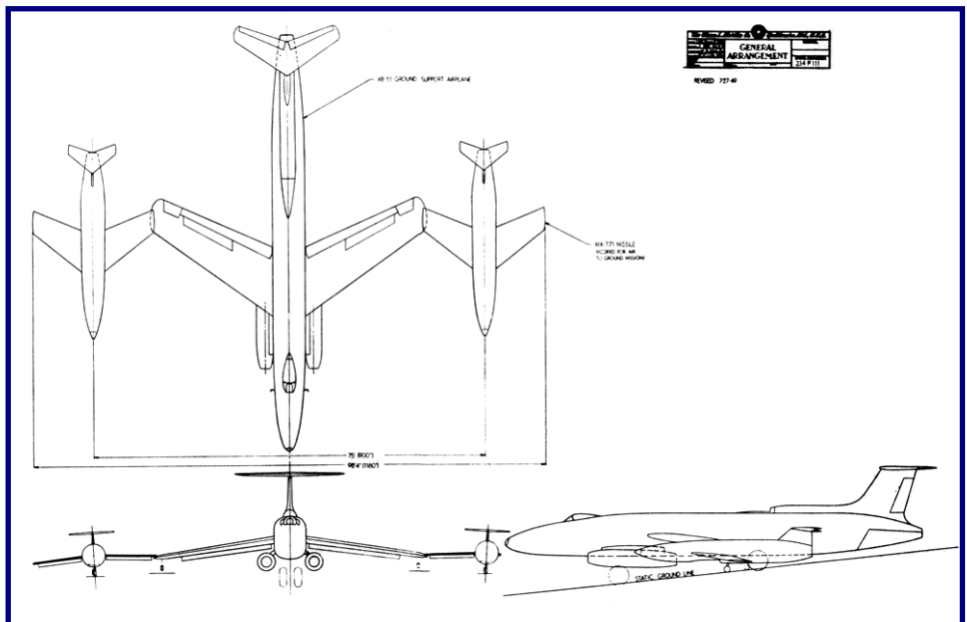
The Martin proposal had the Matador mounted to each wing by a hinged attachment that was toed inward relative to the XB-51 at approximately 15 degrees. This hinge would be capable of transmitting torsion, chordwise shear & bending, and beam wise shear, but not beam wise bending from the missile to the airplane. During flight, the missile was expected to support its own weight and transmit only very small loads to the aircraft's wing. The missiles were supported during ground operations by a single, centrally-located landing gear that retracted once the group became airborne.



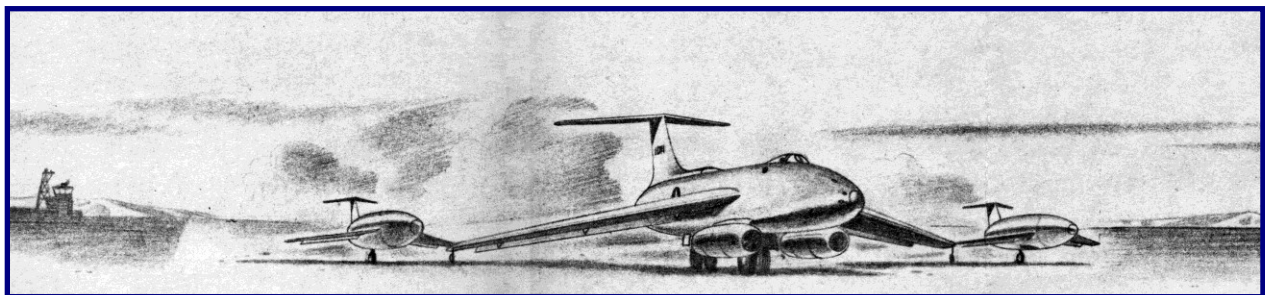
A Republic RF-84F pulls up to the right wingtip of this JRB-36F during a test mission under Project Tom-Tom. (AFMC History Office)

As with many outlandish proposals of the era, this concept did not proceed any further than the paper study, and though the XB-51 faded into obscurity, the Martin Matador stood silently defending the nation during the tension-filled post war years of the 1950's and early 1960's.

The Martin Aircraft Company general arrangement drawing at right depicts the MX-771 Matador missile's size and placement when positioned on the XB-51 host aircraft. (National Archives, St. Louis, MO)



A Martin Aircraft artist concept depicting the takeoff roll of the mated aircraft. (National Archives, St. Louis, MO)





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