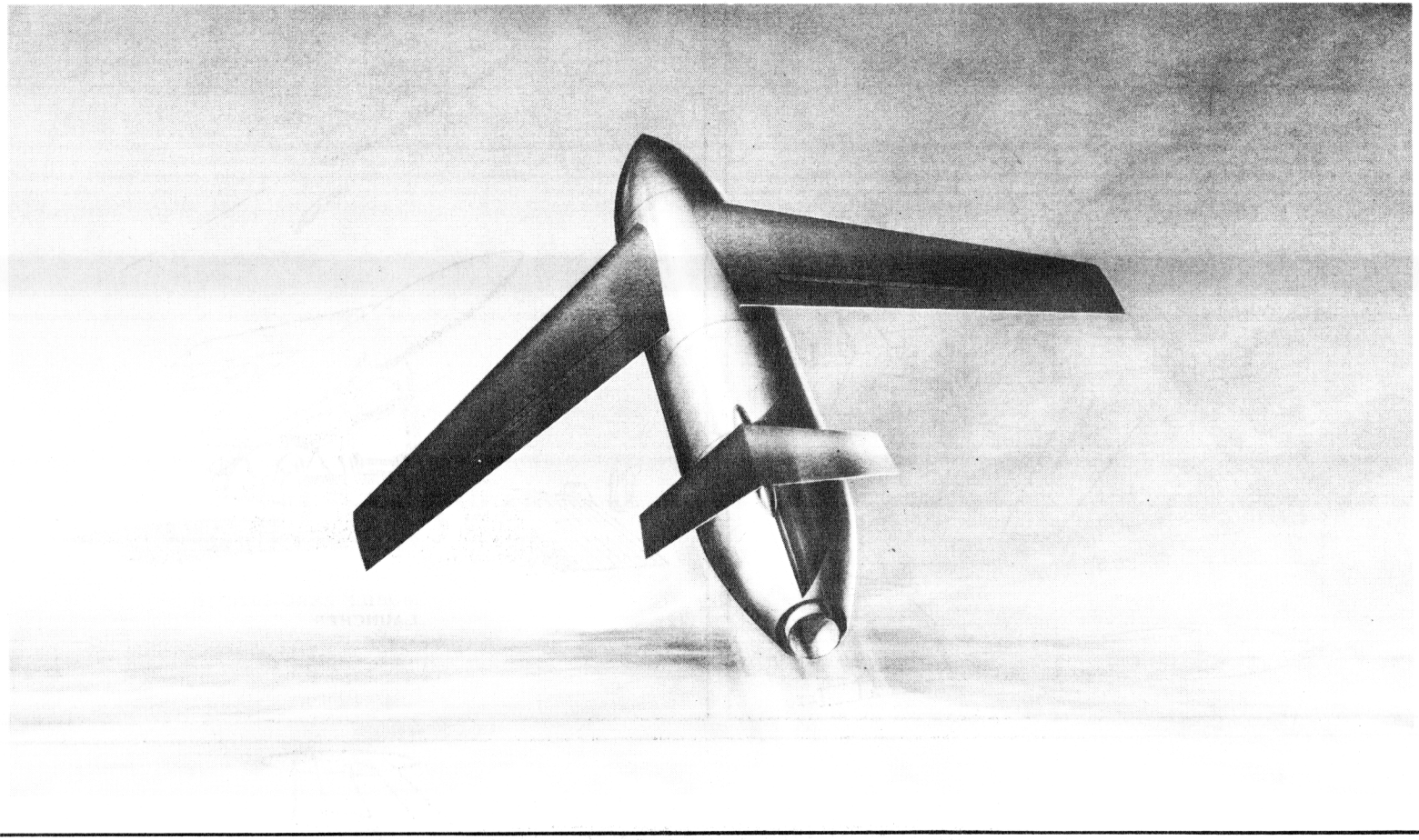


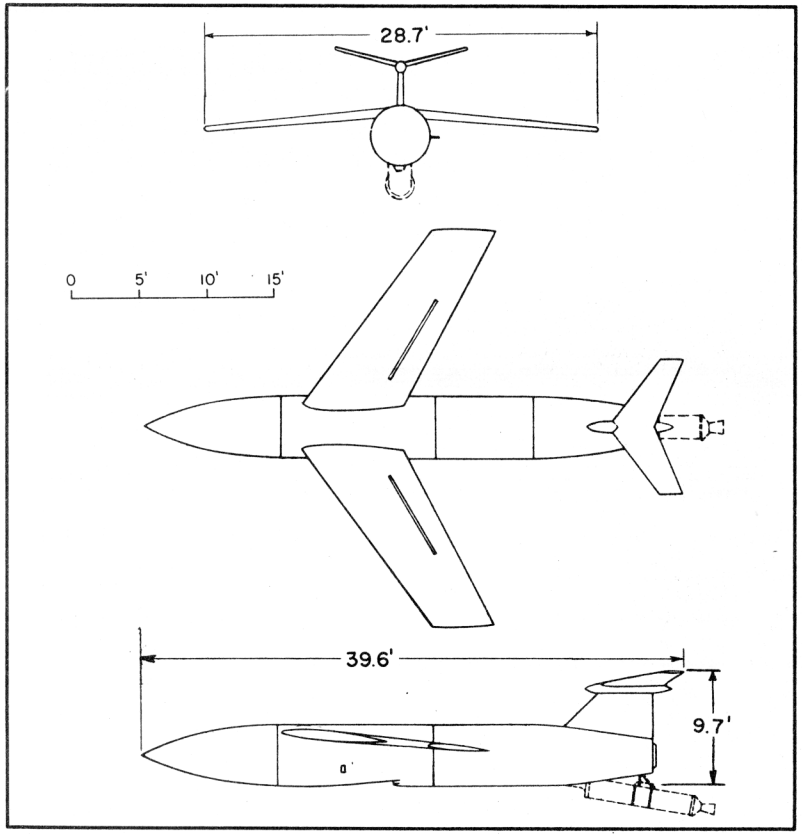
Standard Aircraft Characteristics

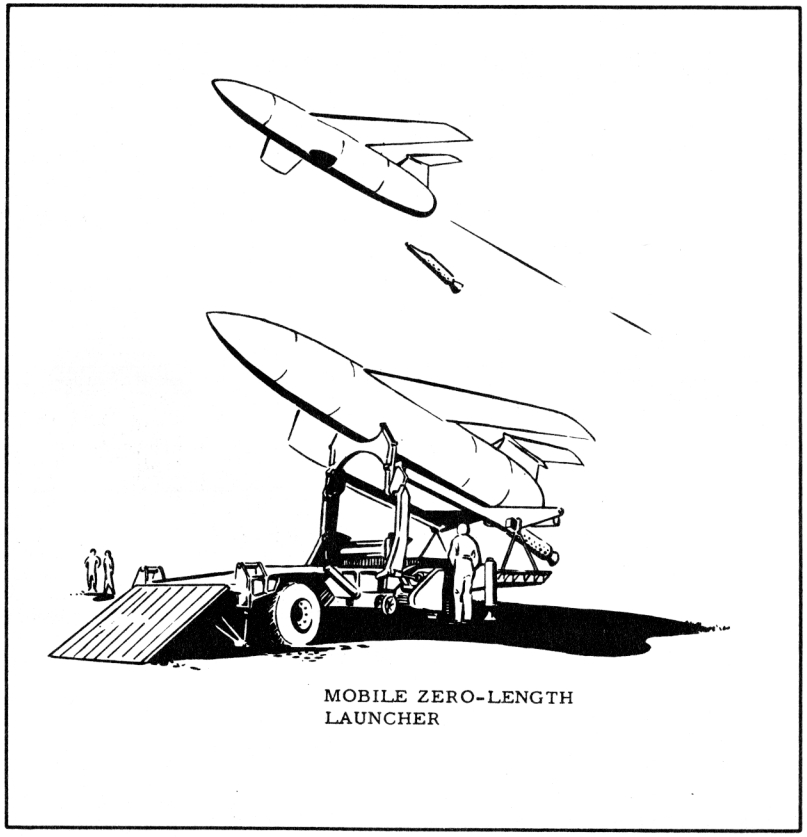
BY AUTHORITY OF
THE SECRETARY
OF THE AIR FORCE

B-61A
MATADOR
MARTIN

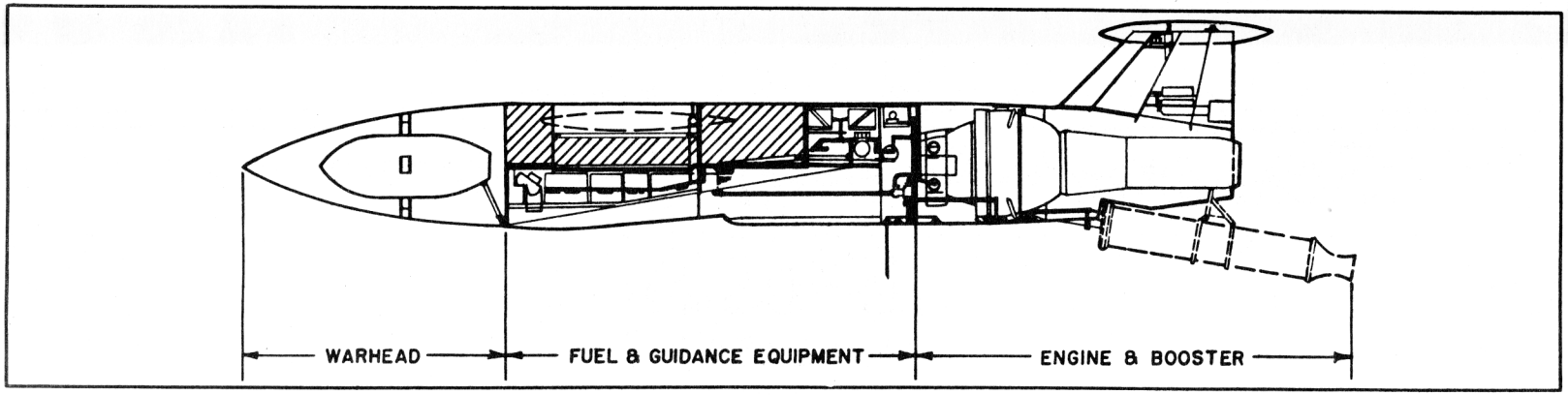
ONE J33-A-37

ALLISON





MOBILE ZERO-LENGTH
LAUNCHER



POWER PLANT

No. & Model	(1) J33-A-37
Mfr	Allison
Engine Spec No.	318-C
Type	Axial
Length	159.5"
Diameter	49.3"
Weight (dry)	1790 lb

BOOSTER

No. & Model . . (1) T-50 modified
Mfr: Picatinny Arsenal & Goodyear

ENGINE RATINGS

S. L. Static	LB	RPM	MIN
Max:	4600	11,750	5
Mil:	—	—	—
Nor:	4600	11,750	Cont

BOOSTER

S. L. Static	LB	SEC
Max	57,000	2.4

Mission and Description

Navy Equivalent: None — Mfr's Model: ——

The MATADOR is a turbo-jet powered subsonic pilotless aircraft equipped with a 3000 lb warhead capable of cruising a distance of 690 nautical miles at a cruising speed of at least Mach 0.9 and at a maximum altitude of 44,000 feet.

The basic design is a shoulder wing type airframe with a "T" type tail. Use of honeycomb construction has made it possible to construct thin, smooth contour wing and tail surfaces. Control is maintained by use of a movable horizontal stabilizer and spoiler type ailerons located in the upper surface of the wing.

Presently the MATADOR is limited to operation of 220 nautical miles forward of guidance base stations since guidance depends on line-of-sight microwave transmission. Immediate developmental goal for tactical utility is guidance to within 1000 feet of target. Extension of effective guidance map-matching technique and/or other guidance systems.

Development

Project Initiated	Aug 45
First Flight (XSSM-A-1)	19 Jan 49
First Flight (YB-61)	22 Dec 50
First Flight (B-61A)	Nov 52

Current plans are directed toward operational readiness of two Pilotless Bomber (B-61) Squadrons during FY 1954.

A program has been initiated to include the Shanicle Guidance System in the MATADOR. This configuration is the B-61C which will replace the B-61A and will contain both Shanicle and MARC. Space, weight and power provisions for Shanicle Guidance is in all B-61A's.

WEIGHTS

Loading	Lb	L. F.
Empty	5410	. . .
Begin Cruise	11,030	. . .
End Cruise	8460	. . .
Launch	12,660	. . .

BOOSTER

Gross	1630 lb

FUEL

Location	No. Tanks	Gal
Fuselage	3	400
	Total	400

Grade . . 100/130, JP-4 or JP-1
Specification . . . MIL-F-5572, MIL-F-5624A or MIL-F-5616

OIL

Fuselage	(tot) 3
Grade	S-1010; W-1005
Specification	MIL-0-6081

DIMENSIONS

Wing

Span	28.7'
Length	39.6'
Height	9.7'

GUIDANCE

SYSTEMS

(a) INITIAL:
Programmed air speed control
(b) MID-COURSE:
MARC (AN/APW-11 used with AN/MSQ-1)
(c) TERMINAL:
Zero lift (ballistic dive)

CONTROL

Electro-Hydraulic Auto-pilot

LAUNCHING

METHOD

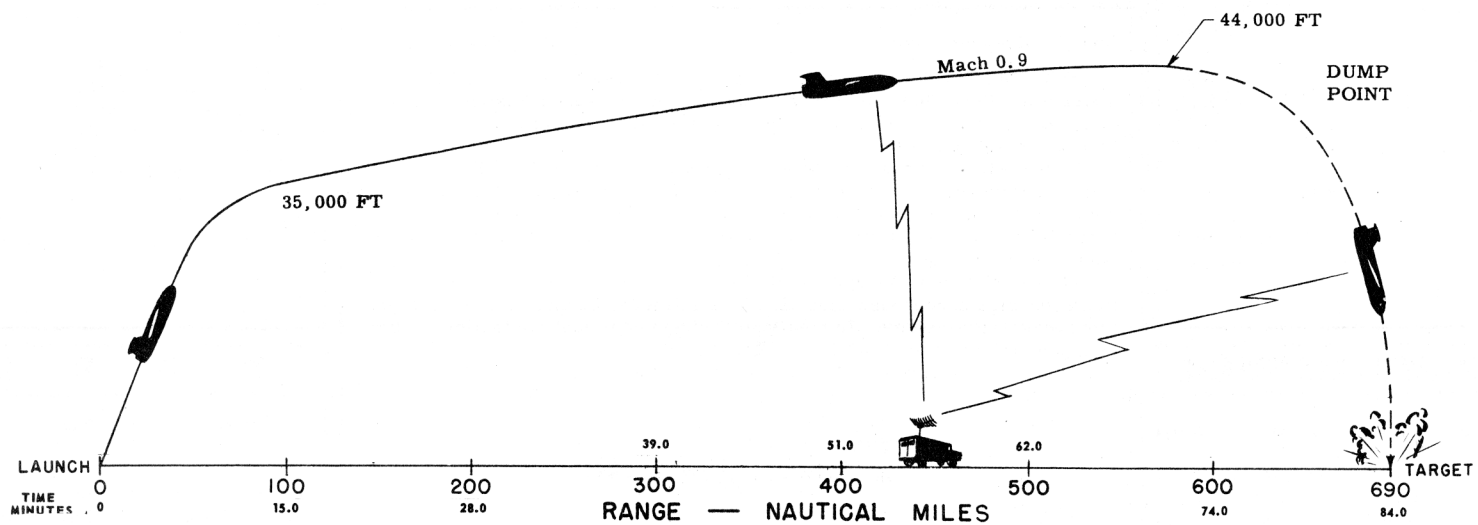
Launched to a speed of 200 MPH from a mobile "zero length" launcher. No catapult or runway is required but a RATO booster is used for additional thrust at launch. Pilotless aircraft is supported on the launcher by two forward ball pivots and a cradle at the aft fuselage section.

PREPARATION & LAUNCH TIME

Assembly and check-out by squadron crews will be approximately 20 pilotless aircraft per 8 hour day. Assembled crafts may be stored for 48 hours without recheck. Ninety minutes will be required for preflight operation.

WARHEAD

Type	Interchangeable
Weight	3050 lb
Fuze	Barometric



GUIDANCE AND CONTROL

LAUNCHING POINT

The pilotless aircraft is launched from a zero length launcher. An automatically-ejected rocket booster to assist the launching is used. The pilotless aircraft climbs under programmed airspeed control to an indicated dynamic pressure of approximately 220 lb/sq ft.

MID-COURSE FLIGHT

The B-61A utilizes the MARC guidance system (Ground Radar Set AN/MSQ-1 and airborne Radar Set AN/APW-11) for mid-course guidance to targets up to 190 nautical miles from the MSQ-1 equipment. The MSQ-1 tracks the pilotless aircraft through the use of the airborne APW-11 beacon. Proper commands are developed either automatically or manually in the MSQ-1 equipment and sent over the radar link to the APW-11 beacon to control position of pilotless aircraft.

TERMINAL DIVE

A terminal dive system controls the pilotless aircraft from "dump" point to target along a zero lift trajectory.

— NOTE —

Line-of-sight limitations to microwave propagation restricts the MATADOR with present guidance to 220 nautical miles.

C1
Matador A/C