Characteristics Summary

AIR INTERCEPT MISSILE ............... AIM-4E (GAR-3)

FALCON

Hughes

Wing Area: Not Applicable
Span: 24.0 in.
Length: 86.0 in.
Height: 24.0 in.

AVAILABILITY

<table>
<thead>
<tr>
<th>Number available</th>
<th>PROCUREMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTIVE</td>
<td>RESERVE</td>
</tr>
</tbody>
</table>

STATUS

1. Extension of AIM-4 development initiated in Jan 52.
2. Improved radome nose shape, antenna reflector, warhead, power supply, and electronic circuitry
Navy Equivalent: None

POWER PLANT

(1) Two-level Thrust Boost-sustain
Solid Rocket XM18E4
Hughes Aircraft Co.

THURST RATINGS
S.L.S @70°F LB - SEC
Nominal (Average)-
High thrust level: 4550-0.61
Low thrust level: 685-2.95

FEATURES

Semi-active Radar Seeker
Ogival Plastic Radome
Cruciform Surface Arrangement
"Roll-rate-limiting" Aileron Control
Blaster Type Warhead
Contact Fuze
Turbine-driven Electrical and Hydraulic Power Supply
Miniaturized Precision Components and Circuitry
Snap-up Capability
Maximum Fuel: 23.3 lb

GUIDANCE

INITIAL (BOOST PHASE)—
None; Tracking Only

MID-COURSE AND TERMINAL—
Homing, Semi-active X-band
Pulse Radar Target Seeker,
Proportional Navigation

CONTROL

Hydraulically Actuated Rear
Control Surfaces Provide
 Necessary Steering and
Damping
Steering Signals Generated by
Target Seeker Tracking
Motion

Mfr's Model: EPA

Sep 63
(AFG 1, Addn 55) (61 of 126)
**Characteristics Summary Basic Mission**

**AIM-4E (GAR-3)**

**Performance**

<table>
<thead>
<tr>
<th>Target</th>
<th>Range</th>
<th>Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subsonic propeller-driven or jet bombers</td>
<td>Nominal missile launch range 3500 ft to 25,000 ft</td>
<td>MAX Launching aircraft speed plus 1200 fps</td>
</tr>
<tr>
<td>Supersonic jet bombers</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Launching**

<table>
<thead>
<tr>
<th>Flight Time</th>
<th>Altitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short-length tracks (4) extended from F-106A fuselage bay</td>
<td>Nominal missile flight time: 3.5 sec to 22.0 sec</td>
</tr>
<tr>
<td>16 sec minimum preparation time from AI radar detection</td>
<td>Effective up to 70,000 ft</td>
</tr>
<tr>
<td>Salvos of 2 or 4 missiles</td>
<td></td>
</tr>
</tbody>
</table>

**Load Weights**

<table>
<thead>
<tr>
<th>Load</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warhead and Fuze (installed)</td>
<td>10.3 lb</td>
</tr>
<tr>
<td>Explosive</td>
<td>5.00 lb</td>
</tr>
<tr>
<td>Motor (loaded)</td>
<td>39.4 lb</td>
</tr>
<tr>
<td>Useful Fuel</td>
<td>23.3 lb</td>
</tr>
<tr>
<td>Empty</td>
<td>98.2 lb</td>
</tr>
<tr>
<td>Pre-launch</td>
<td>140.0 lb</td>
</tr>
<tr>
<td>End of Boost Phase</td>
<td>127.3 lb</td>
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<tr>
<td>Burnout</td>
<td>116.4 lb</td>
</tr>
</tbody>
</table>

**Target Accuracy**

- $P_k = 0.87$ for salvo of 2 missiles in rear hemisphere attacks against subsonic and supersonic bombers

**Notes**

1. Performance Basis:
   - (a) Calculation based on experimental FALCON flight tests, component tests, and estimated data.
   - (b) NACA standard atmospheric conditions.

2. Revision Basis: To reflect change in model designation (AFR 66-20).

3. Probability of kill ($P_k$) value is based upon 90% missile reliability and 0.90 hits per kill.

4. Nominal values correspond to idealized operation of the fire control system.