Characteristics Summary

GUIDED AIRCRAFT ROCKET . . . . YGAR-4

FALCON

HUGHES

Wing Area: Not Applicable
Span: 24.0 in.
Length: 83.4 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 GAR-2 development initiated in March 1954
2. Improved warhead, power supply, and electronic circuitry
3. Improved performance characteristics

Navy Equivalent: None
Mfr's Model: GG

POWER PLANT

(1) Two-phase Boost-sustain Solid Rocket T-63
Hughes Aircraft Co.

THRUSET RATINGS

<table>
<thead>
<tr>
<th>S.L.S.</th>
<th>LB</th>
<th>SEC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal (Average)</td>
<td>4640</td>
<td>0.61</td>
</tr>
<tr>
<td>Boost:</td>
<td>685</td>
<td>2.95</td>
</tr>
<tr>
<td>Total:</td>
<td></td>
<td>3.63</td>
</tr>
</tbody>
</table>

FEATURES

Passive Infrared Seeker
Spherical-nose Quartz Nirdome
Cruciform Surface Arrangement
"Roll-rate-limiting" Aileron Control
Blast Type Warhead
Contact Fuze
Turbine-driven Electrical and Hydraulic Power Supply
Miniaturized Precision Components and Circuitry
Simplified Fire Control System Capability
Snap-up Capability
Maximum Fuel: 23.6 lb

GUIDANCE

INITIAL (BOOST PHASE)—None; Tracking Only
MID-COURSE AND TERMINAL—Homing, Passive Infrared Target Seeker, Proportional Navigation

CONTROL

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

20 FEB 56 SECRETYGAR-4
**Characteristics Summary Basic Mission**

**Performance**

<table>
<thead>
<tr>
<th>Targets</th>
<th>Range</th>
<th>Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subsonic propeller-driven or jet bombers</td>
<td>Nominal missile launch range: 3400 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>
<tr>
<td>Subsonic or supersonic jet fighters</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Launching**

| Extensible short-length tracks (6) located in F-102B fuselage bay | Nominal missile flight time: 4.3 sec to 17.3 sec | Effective up to 70,000 ft |
| 16 sec minimum preparation time from AI radar detection | | |
| Salvos of 3 or 6 missiles | | |

**Load Weights**

| Warhead and Fuze (installed) 10.7 lb | Empty 122.6 lb | |
| Explosive 5.00 lb | Pre-launch 135.0 lb | |
| Motor (loaded) 40.5 lb | End of Boost Phase 119.8 lb | |
| Useful Fuel 23.6 lb | Burnout 111.4 lb | |

**Target Accuracy**

*P_a* = 0.95 for salvo of 3 missiles in rear hemisphere attacks against subsonic and supersonic bombers

**Notes**

1. Performance Basis:
   - Calculation based on experimental FALCON flight tests, component tests, and estimated data. (Not substantiated by WADC)
   - NACA standard atmospheric conditions.

2. Revision Basis: To reflect latest characteristics and performance data.

3. Probability of kill (*P_a*) value is based upon 90% missile reliability and 0.90 kills per hit.

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