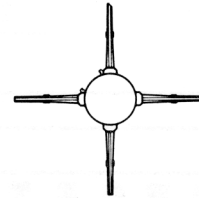
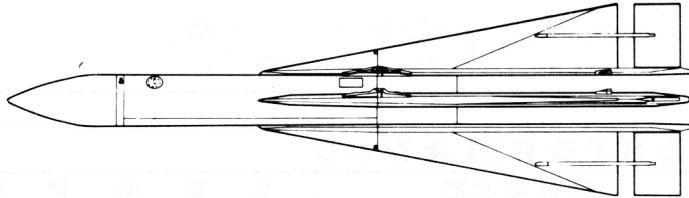


# Characteristics Summary

GUIDED AIRCRAFT ROCKET . . . . . YGAR-3



FALCON

HUGHES

Wing Area . . . . . Not Applicable    Length . . . . . 86.5 in.  
 Span . . . . . 24.0 in.    Height . . . . . 24.0 in.

### AVAILABILITY

### PROCUREMENT

Number available			Number to be delivered in fiscal years			
ACTIVE	RESERVE	TOTAL				

### STATUS

1. Extension of GAR-1 development initiated in 1951  
 2. Improved radome nose shape, antenna reflector, warhead, power supply, and electronic circuitry  
 3. Improved performance characteristics  
 4. Development will follow GAR-1 by approximately three years  
 5. First Air-to-air Hit: Jul 55

Navy Equivalent: None Mfr's Model: EP

### POWER PLANT

(1) Two-level Thrust Boost-sustain,  
 Solid Rocket T-63  
 Hughes Aircraft Co.

**THRUST RATINGS**

S.L.S. @ 70°F    LB    —    SEC

Nominal (Average) —

High-thrust Level: 4640    —    0.61

Low-thrust Level: 685    —    2.95

### FEATURES

Semi-active Radar Seeker  
 Pointed-nose Plastic Radome  
 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  
 Snap-up Capability  
 Maximum Fuel . . 23.6 lb

### GUIDANCE

**INITIAL (BOOST PHASE)—**  
 None; Tracking Only

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

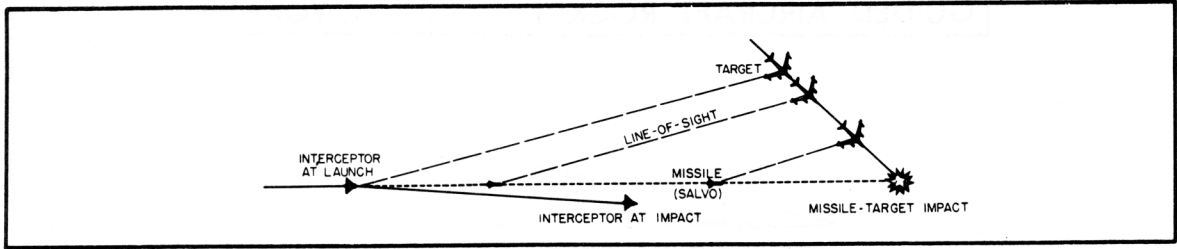
### CONTROL

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

CONFIDENTIAL  
 DOWNGRADED AT 3 YEAR INTERVALS  
 BY AD-DECLASSIFIED AFTER 12 YEARS  
 DOD DIR 5200.10  
 16 May 68

4th Ed addn #15

*Characteristics Summary Basic Mission . . . . . YGAR-3*



<b>P E R F O R M A N C E</b>		
<b>T A R G E T S</b>	<b>R A N G E</b>	<b>S P E E D</b>
Subsonic propeller-driven or jet bombers  Supersonic jet bombers	Nominal missile launch range: 3400 ft to 25,000 ft	MAX Launching aircraft speed plus 1200 fps
<b>L A U N C H I N G</b>	<b>F L I G H T T I M E</b>	<b>A L T I T U D E</b>
Short-length tracks (4) extended from F-102B fuselage bay  16 sec minimum preparation time from AI radar detection  Salvos of 2 or 4 missiles	Nominal missile flight time: 4.3 sec to 17.3 sec	Effective up to 70,000 ft
<b>L O A D</b>	<b>W E I G H T S</b>	<b>T A R G E T A C C U R A C Y</b>
Warhead and Fuze (installed) . . . . . 10.7 lb Explosive . . . . . 5.00 lb Motor (loaded) . . . . . 40.5 lb Useful Fuel . . . . . 23.6 lb	Empty . . . . . 121.3 lb Pre-launch . . . . . 135.0 lb End of Boost Phase . . . . . 119.9 lb Burnout . . . . . 111.4 lb	$P_k$ — 0.87 for salvo of 2 missiles in rear hemisphere attacks against subsonic and supersonic bombers

- N O T E S**
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 latest characteristics and performance data.
  3. Probability of kill ( $P_k$ ) 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.