**Characteristics Summary**

**GUIDED AIRCRAFT ROCKET... SYSTEM 221A**

"SIDEWINDER"  
PHILCO CORP.

<table>
<thead>
<tr>
<th>Wing Area (N.A.)</th>
<th>Length (108.0 in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Span (Wing)</td>
<td>21.0 in.</td>
</tr>
<tr>
<td>(Fins)</td>
<td>15.0 in.</td>
</tr>
</tbody>
</table>

**AVAILABILITY**

<table>
<thead>
<tr>
<th>Number available</th>
<th>Number to be delivered in fiscal years</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTIVE</td>
<td>RESERVE</td>
</tr>
</tbody>
</table>

**PROCUREMENT**

**STATUS**

The SIDEWINDER is a Navy project initiated in 1947. USAF participation in the program was initiated in Aug 1955. The USAF will investigate the compatibility of the missile with various USAF fighter aircraft and will conduct necessary test and evaluation work. Results will be coordinated with the Navy. The Navy has a continued development plan to expand and increase the performance of the missile.

Navy Equivalent: AAM-N-7  
Mfr's Model: -----

**POWER PLANT**

| (1) HPAG 5" Solid Rocket Motor  
Navy Mk 15 Mod 0  
S.L.S. LB Duration (sec)  
Nominal: 4000 2.2 |

**FEATURES**

- Guided Aircraft Rocket for destruction of subsonic and supersonic aircraft
- Canard cruciform configuration
- Combination blast and fragmentation warhead--contact and influence fuse
- Gas turbo-generator supplies all electrical power
- Used for tail cone attacks only
- Possible future capability of conducting head-on attacks

Max Fuel Cap: 42 lb

**GUIDANCE**

- Passive Infra-red seeker which collects signals and directs reticle chopped rays to a lead sulfide cell. Voltage variations of the cell are oriented by combination with phase generator signals. The resultant combined signal is fed to a control unit.

**CONTROL**

Gas operated servo cylinders which respond to the above signals to deflect the guidance fins. The control system is a torque balance type which automatically compensates for altitude and speed variations.
## Characteristics Summary Basic Mission

### PERFORMANCE

<table>
<thead>
<tr>
<th>ENDURANCE</th>
<th>RANGE</th>
<th>SPEED</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOT APPLICABLE</td>
<td>2000 - 6000 ft at SL</td>
<td>Launching speed of aircraft</td>
</tr>
<tr>
<td></td>
<td>2500 - 8000 ft at</td>
<td>plus 1000 knots at</td>
</tr>
<tr>
<td></td>
<td>10,000 ft alt</td>
<td>10,000 - 30,000 ft alt</td>
</tr>
<tr>
<td></td>
<td>2500 - 18,000 ft at</td>
<td>Launching speed of aircraft</td>
</tr>
<tr>
<td></td>
<td>50,000 ft alt</td>
<td>plus 1150 knots at</td>
</tr>
<tr>
<td></td>
<td></td>
<td>30,000 - 60,000 ft alt</td>
</tr>
</tbody>
</table>

### LAUNCHING

Model D Single Rail Launcher. Plans are underway for test launching from F-86D, F-100 and F-104 type aircraft.

### CLIMB

Climbing attacks are limited to aircraft snap-ups only.

### ALTITUDE

Max capability up to 50,000 ft. Limited capability up to 60,000 ft.

### LOAD WEIGHTS

- **Warhead:** 25 lb
- **Fuel:** 42 lb
- **Burnout:** 113.0 lb
- **Launch:** 155.0 lb

### TARGET ACCURACY

- **R_k = 0.50** (Single shot)

### NOTES

1. Performance Basis:
   - (a) Estimated data (Not substantiated by WADC)
2. Revision Basis: Initial Issue