Characteristics Summary

PILOTLESS SPACECRAFT ............... SM-65D

"ATLAS"

GENERAL DYNAMICS - ASTRONAUTICS

Length .......................... 81.7 ft
Diameter (nominal) ............... 10.9 ft

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

<table>
<thead>
<tr>
<th>STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Initial design complete ............... Jun 58</td>
</tr>
<tr>
<td>2. Static test (start of SM-65D) ............... Mar 59</td>
</tr>
<tr>
<td>3. First flight SM-65D(test vehicle) ............... Apr 59</td>
</tr>
</tbody>
</table>

Navy Equivalent: None

Mfr's Model: —

POWER PLANT

Booster
NAA - Rocketwork
Thrust (lb) 388, 484, 114,500 cea
Duration (sec) 281.0 323.5
Total thrust at Launch 368,000 lb

* Gimbaled Yaw ± 6°
** Gimbaled Yaw ± 4.5°
Pitch ± 4.5°
*** Gimbaled Yaw -34° + 24°
Pitch = Roll ± 74°
**** Jettisoned at end of first stage

FUEL
Grade RP-1 ............... 77,823 lb
Oxidizer (Liquid Oxygen) ............... 175,169 lb

FEATURES

Spacecraft maintained in horizontal position in an erection launch
launcher.
Electronic equipment, wiring &
liquid oxygen lines located externally.
All rocket engines started on
ground.
Gimbaled engines for positioning
in pitch, yaw and roll.
Flight path and characteristics
under constant radio and radar
monitor.
All guidance is provided over
friendly territory.

GUIDANCE

Guidance & Control are perform-
ed by a Radio Tracking Guid-
ance System in conjunction with
a Missileborne Auto-pilot and
Hydraulic Powered Control
System.

ARMAMENT

The re-entry vehicle separates
from the mid section at the end
of powered flight and follows a
ballistic flight path to the
target.
## Characteristics Summary Typical Mission

![Diagram](Image)

### Performance (typical)

<table>
<thead>
<tr>
<th>FLIGHT TIME</th>
<th>RANGE</th>
<th>VELOCITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>GUIDANCE</td>
<td>7266 Nautical Miles</td>
<td>Burnout 24,016 ft/sec</td>
</tr>
<tr>
<td>231 Seconds</td>
<td>Based on non-rotating earth</td>
<td>Re-entry 24,850 ft/sec</td>
</tr>
<tr>
<td>Not including vernier stage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL FLIGHT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2974 Seconds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Based on vacuum re-entry</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### LAUNCHING

- Spacecraft is erected to a vertical position on a launcher by an ejection boom, and is then readied for launching.

### ACCELERATION

<table>
<thead>
<tr>
<th></th>
<th>POWERED FLIGHT</th>
<th>SURFACE - SURFACE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thrust/Weight 'G'</td>
<td>Launch 1.40</td>
<td>Burnout 988, 315 ft</td>
</tr>
<tr>
<td></td>
<td>Staging 7.71</td>
<td>Apogee 6,081,705 ft</td>
</tr>
<tr>
<td></td>
<td>Burnout 8.17</td>
<td>(1001 Nautical Miles)</td>
</tr>
</tbody>
</table>

### ALTITUDE

- 300,000 ft

### RE-ENTRY VEH WEIGHTS

- Type: Special
- Weight: 2100 lbs
- Location: Forward section
- Empty: 14,953 lb
- Residuals: 2262 lb
- Propellant: 245,167 lb
- Re-entry Vehicle: 2100 lb
- Launching: 262,402 lb
- Maximum accuracy attainable with a Radio Tracking Guidance System

### PERFORMANCE DATA

1. Programmed turn to reach flight path starts at 15 seconds.
2. Initiation of jettison of first-stage booster unit 135 seconds after launch.
4. Final power cut-off and end of guidance - 305 seconds maximum after launch contingent upon the requirements of GFAE guidance.
5. Re-entry vehicle section separation - immediately after final cut-off.
6. Apogee - 1491 seconds after launch, 1001 nautical mile altitude.
7. Re-entry into appreciable atmosphere 2780 seconds after launch.
8. Revision Basis: To reflect current characteristics and performance data.