Characteristics Summary

MILITARY TEST SYSTEM ............... DYNASOAR

Air Vehicle: Length (overall) .......... 161.3 ft
Booster Length (overall) ............. 124.0 ft
Strap-on Stage Length ................. 73.2 ft
Horizontal Fin Span .................. 86.0 ft
Vertical Fin Span .................... 50.9 ft
Glider: Wing Area .................... 345 sq ft
Wing Span .................. 20.8 ft
Length (glider only) ................. 35.4 ft
(glider and transition section) 43.4 ft

PROCUREMENT

Number to be delivered in fiscal years

<table>
<thead>
<tr>
<th></th>
<th>FY 63</th>
<th>FY 64</th>
<th>FY 65</th>
<th>FY 66</th>
<th>FY 67</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glider</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Refurbished Glider</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>4</td>
<td>2</td>
<td>7</td>
</tr>
</tbody>
</table>

STATUS

1. Orbital Program Go-Ahead .......... 11 Dec 61
2. Launch Dates:
   First Air Drop
   First Unmanned Ground Launch
   First Piloted Ground Launch

POWER PLANT

Booster:
   Model ............... Titan III
   Mfr ............... SSD and their contractors
Titan III consists of a transfer stage, the modified Titan II liquid propellant booster and two 'strap-on' solid propellant boosters.

Glider:
   A solid propellant rocket is provided for escape purposes only in event of abort on the pad or during boost.
   Nr & Model ....... (1) XM92
   Mfr ............... Thiokol
   Type ............. Solid Rocket
   Duration .......... 13.4 sec
   Thrust .......... 46,000 lb@SL

FEATURES

Crew ............... 1
SHF & UHF Communications,
with compartment water wall
structure utilizing latent heat of
evaporation for heat dissipation.

Reaction plus aerodynamic controls.

Full time three axis self-adaptive
stability augmentation.

Skid-type three point landing gear.
Inertial guidance for boost, orbit
and re-entry.

Provides piloted, maneuverable vehicle and associated equipment for conducting experiments in the hypersonic and orbital flight regime in order to: (1) gather research data to solve design problems of controlled, lifting re-entry from orbital flight; (2) demonstrate piloted, controlled, maneuvering re-entry with tangential recovery at a pre-selected landing site; (3) test vehicle equipments and explore military man's function in space.
**Characteristics Summary Basic Mission**

**Performance**

<table>
<thead>
<tr>
<th>Launch</th>
<th>Boost</th>
<th>Velocity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site: Cape Canaveral</td>
<td>Thrust (nominal): 17,760,000 lb</td>
<td>V burnout: 24,500 fps</td>
</tr>
<tr>
<td>Initial Heading: 105° (planned)</td>
<td>1st stage: 474,000 lb</td>
<td>V apogee: 24,100 fps</td>
</tr>
<tr>
<td></td>
<td>2nd stage: 100,000 lb</td>
<td>V re-entry: 24,870 fps</td>
</tr>
<tr>
<td></td>
<td>Trans. stage: 10,000 lb</td>
<td>V approach: 200 knots</td>
</tr>
<tr>
<td></td>
<td>End of Boost</td>
<td></td>
</tr>
<tr>
<td>Altitude (max): 680,000 lb</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(orbital): 320,000 lb</td>
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<td></td>
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</tbody>
</table>

**ACCELERATION**

Peak load factor value during boost: 5.0
End Second Stage boost: 3.3
Glider acceleration rocket: 3.3

**Range**

Longitudinal Range: 19,700 n mi
Orbital: Once Around
Distance: 19,700 n mi
Time: 104 min

**ACCELERATION**

Site: Edwards AFB
Nominal Landing Speed: 175 knots
Nominal Run-out Distance: 2750 ft

**Temperature**

Max during Flight Re-entry
Nose Stagnation: 4050°F (έ = 0.6)
Wing Leading Edge: 2700°F (έ = 0.9)

**Weights**

Launch (gross): 1,221,500 lb
Glider & Transition (launch): 28,000 lb
Nominal: 18,000 lb
Glider (re-entry): 11,150 lb

**Loads**

Pay load: Compartment capacity 75 cu ft and 1000 lb
Glider acceleration rocket: Solid Propellant: 2200 lb

**Notes**

1. Performance Basis:
   (a) Estimated data
2. Booster thrust, length of strap-on solids and size and shape of booster fins based on preliminary data.
3. Drone recovery employed in unmanned launches.
4. B-52C (AF53-399) will be modified for use as air launch vehicle and for ferry purposes.
5. Not shown in Procurement Section: one (1) static Test Glider - FY 64.
6. Revision Basis: Added transition section to 3-view drawing. Added transfer stage and new fins to booster. Revised weights and velocities.