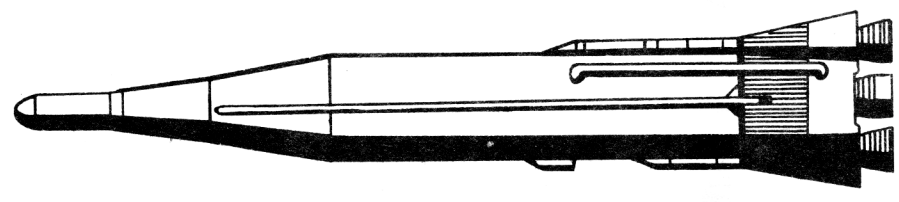


*Unclassified*  
~~CONFIDENTIAL~~  
SECRET

# Characteristics Summary

PILOTLESS SPACECRAFT . . . . . CGM-16D (SM-65D)



“ATLAS” . . . . . GENERAL DYNAMICS - ASTRONAUTICS  
Length . . . . . 81.7 ft . . . . . Diameter (nominal) . . . . . 10.0 ft

A V A I L A B I L I T Y			P R O C U R E M E N T			
Number available			Number to be delivered in fiscal years			
ACTIVE	RESERVE	TOTAL				

S T A T U S	
1. Initial design complete . . . . . Jun 58	3. First flight CGM-16D (SM-65) (test vehicle) . . . . . Apr 59
2. Static test (start of SM-65D)CGM-16D . . . . . Mar 59	
Navy Equivalent: None	Mfr's Model: —

P O W E R P L A N T		
NAA - Rocketdyne		
Booster (2)*LR	Sustainer (1)**LR-	Vernier (2)**LR-
89-NA-3	105-NA-3	101-NA-3
Thrust (lb) @S. L. 154,500(ea)	57,000	1000(ea)
Duration (sec) 135****	281.0	322.5
Total thrust at Launch 368,00 lb		
*Gimbale Yaw ± 6° Pitch & Roll ± 6°		
**Gimbale Yaw ± 4.5° Pitch ± 4.5°		
***Gimbale Yaw -34° + 24° Pitch - Roll ± 74°		
****Jettisoned at end of first stage		
F U E L		
Grade RP-1 . . . . . 77,833 lb		
Oxidizer (Liquid Oxygen) . . . . . 175,169 lb		

**F E A T U R E S**

Spacecraft maintained in horizontal position in an erection launch launcher

Electronic equipment, wiring & liquid oxygen lines located externally

All rocket engines started on ground

Gimbale 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

**G U I D A N C E**

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

**A R M A M E N T**

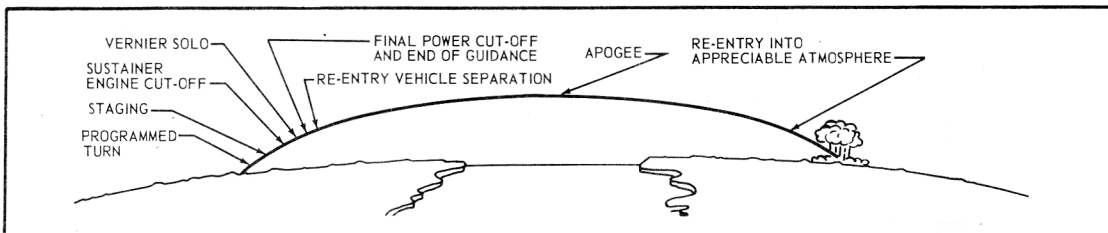
The re-entry vehicle separates from the mid section at the end of powered flight and follows a ballistic flight path to the target.

DOWNGRADED AT 3 YEAR INTERVALS;  
 DECLASSIFIED AFTER 12 YEARS  
 DOD DIR 5200.10

*e.m. white 2/19/77*  
*W. M. White*

*CGM-16D/char*

*Characteristics Summary Typical Mission... CGM-16D (SM-65D)*



*Performance (typical)*

<b>FLIGHT TIME</b>	<b>RANGE</b>	<b>VELOCITY</b>
GUIDANCE 281 Seconds Not including vernier stage  TOTAL FLIGHT 2974 Seconds Based on vacuum re-entry	7266 Nautical Miles Based on non-rotating earth	Burnout     24,016 ft/sec  Re-entry     24,850 ft/sec
<b>LAUNCHING</b>	<b>ACCELERATION</b>	<b>ALTITUDE</b>
Spacecraft is erected to a vertical position on a launcher by an erection boom, and is then readied for launching.	POWERED FLIGHT Thrust/Weight 'G'  Launch        1.40 Staging        7.71 Burnout        8.17	SURFACE - SURFACE Burnout        968,315 ft  Apogee        6,081,705 ft (1001 Nautical Miles) Re-entry        300,000 ft
<b>RE-ENTRY VEH</b>	<b>WEIGHTS</b>	<b>TARGET ACCURACY</b>
Type            Special  Weight          2100 lbs  Location        Forward section	Empty            14,953 lb Residuals        2262 lb Propellant       245,187 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.
3. Sustainer engine cut-off -281 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 change model designation in accordance with AFR 66-20.