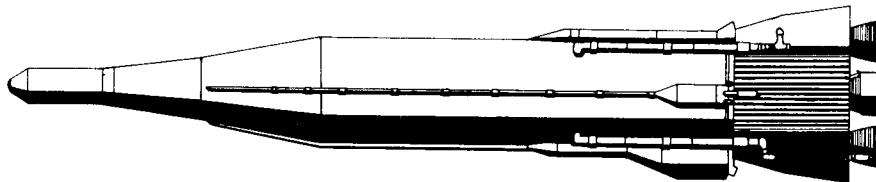


unclassified
~~CONFIDENTIAL~~

SECRET

Characteristics Summary

PILOTLESS SPACECRAFT SM-65F



"ATLAS"

GENERAL DYNAMICS - ASTRONAUTICS

Length (overall) 81.6 Diameter (nominal)

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

Initial Design Complete, SM-65F Dec 60 First Flight (Test Vehicle) SM-65F Aug 61
Static Test, Start of, SM-65F Apr 61 Delivery of First Operational Missile to operational site 1961

P O W E R P L A N T

NAA - Rocketdyne

Booster	Sustainer	Vernier
(2)* LR-89-NA-3	(1)**LR-105-NA-3	***LR-101-NA-3
Thrust (lb) @S.L.	165,000(ea)	57,000 1000(ea)
Duration (sec)	124.8****	312
Total thrust at Launch	389,000 lb	
*Gimbaled Yaw $\pm 5.0^\circ$		
Pitch & Roll $\pm 5.0^\circ$		
**Gimbaled Yaw $\pm 3.0^\circ$		
Pitch $\pm 3.0^\circ$		
***Gimbaled Yaw - Roll $\pm 70^\circ$		
***Pitch $28^\circ - 50^\circ$ ref		
missile ctr line		
****Jettisoned at end of first stage		
FUEL		
Grade RP-1	77.031 lb	
Oxidizer (Liquid Oxygen)	175.226 lb	

F E A T U R E S

SM-65F is a ballistic-type pilotless spacecraft designed to provide proficiency training; establish confidence in reliability; tactical use.

The airframe consists of a forward section, mid section, and aft section with no external aerodynamic surfaces. The re-entry vehicle separates from the mid section at the end of powered flight and follows a ballistic flight path to the target.

SM-65F is a one-and-one-half stage spacecraft; all engines are started on the ground; the booster unit is jettisoned early in flight.

G U I D A N C E

Guidance and control are performed by an All Inertial Guidance System in conjunction with a Missileborne Autopilot 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

Feb 62

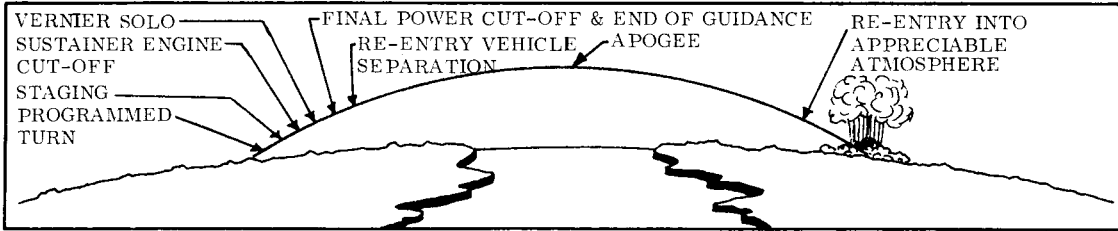
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SM-65F

(AFG 1, Addn 35) (49 of 112)

57WIC-4982

Characteristics Summary Basic Mission SM-65F



P E R F O R M A N C E		
FLIGHT TIME	RANGE	VELOCITY
GUIDANCE 312.0 Seconds Not including vernier stage TOTAL FLIGHT 2552 Seconds	6,788 Nautical Miles Based on non-rotating earth	Burnout 23,529 ft/sec Re-entry 24,409 ft/sec Impact (Vacuum Entry) 24,797 ft/sec
LAUNCHING	ACCELERATION	ALTITUDE
Spacecraft is elevated from the underground silo to the launch position and launched at completion of countdown.	POWERED FLIGHT Thrust/Weight 'G' Launch 1.46 Staging-Initiation 6.95 Burnout 7.20	SURFACE - SURFACE Burnout 1,007,915 ft (165.9 Nautical Miles) Apogee 4,635,551 ft (763 Nautical Miles) Re-entry 300,000 ft
RE-ENTRY VEHICLE	W E I G H T S	TARGET ACCURACY
Type Special Weight 3825 lb Location Forward Section	Empty 16,123 lb Residuals 1981 lb Propellant 249,032 lb Re-entry Vehicle 3825 lb Launching 267,136 lb	Maximum accuracy attainable with an all Inertial Guidance System.

N O T E S
<ol style="list-style-type: none"> 1. Programmed turn to reach flight path starts at 1800 ft altitude. 2. Jettison of first-stage booster unit 127.8 sec after launch. 3. Sustainer engine cut-off 312.0 sec after launch. 4. Final power cut-off and end of guidance as determined by range and azimuth of target with a maximum allowable of 349 seconds. 5. Re-entry vehicle section separation immediately after final cut-off. 6. Apogee 1331 sec after launch, 763 nautical mile altitude. 7. Re-entry into appreciable atmosphere 2484 sec after launch.