STANDARD AIRCRAFT CHARACTERISTICS

SSM-N-9 "REGULUS II"

CHANCE VOUGHT

10 FEBRUARY 1958
POWER PLANT

No. & Model: (1) J79-GE-3
Mfr.: General Electric
Type: Axial Flow
Eng. Length: 106.8"
Eng. Dia.: 47"
Nozzle: Variable Ejector

BOOST ROCKET: (1) Aerojet

RATINGS

Max. 15,000 lb. 7,468 lb. L.E.
Military 9,600 lb. 7,468 lb. L.E.

SPEC. No. R-701A

BOOST ROCKET: 115,000 lb. for 4.0 seconds

MISSION AND DESCRIPTION

The SSM-N-9 REGULUS II Tactical Missile is a surface-to-surface guided missile designed to deliver a warhead at Mach number 2.0 to a target 500 nautical miles from the launching site.

The SSM-N-9 is a development of the SSM-N-8, REGULUS I, and of the ERSSM-N-9, REGULUS II Flight Test Missile. Like its predecessors, the REGULUS II Tactical Missile incorporates conventional aircraft components, both aerodynamic and structural, wherever feasible. It is a sweptback monoplane with conventional fin and rudder. Longitudinal control, as well as lateral control, is accomplished through the use of elevons located on the inboard trailing edge of the wing. A fixed horizontal nose trimmer is provided to minimize trim drag. Neither high-lift devices nor dive brakes are included. Launch from submarine, surface vessel, or shore installation is accomplished with the aid of a boost rocket. There are no provisions for landing the Tactical Missile; however, the Flight Test Missiles (ERSSM-N-9, ERSM-N-9a) to be used in the development of the Tactical Missile are recoverable.

DEVELOPMENT

First Flight - September 1957
Service Use - January 1960

WEIGHTS

Loadings:
Basic: 15,453 lb.
Design: 22,200 lb.
Max. Launch: 27,220 lb.
Max. Flight: 22,564 lb.

All weights are calculated

FUEL AND OIL

<table>
<thead>
<tr>
<th>GALS.</th>
<th>No. TANKS</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>118</td>
<td>1</td>
<td>Fus. Main</td>
</tr>
<tr>
<td>927</td>
<td>6</td>
<td>Fus. Transfer</td>
</tr>
</tbody>
</table>

FUEL GRADE: JP-5
FUEL SPEC.: applicable MIL-F-5624

OIL

Capacity (gals.): 4
No. TANKS: applicable MIL-I-7808

ARMAMENT

MUNITIONS

Class "D" (Special)

FUSIBLE

Barometric type

DIMENSIONS

<table>
<thead>
<tr>
<th>WING</th>
<th>AREA</th>
<th>145 sq. ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPAN (Normal)</td>
<td>12'</td>
<td>6.1'</td>
</tr>
<tr>
<td>SPAN (Folded)</td>
<td>12'</td>
<td>1.3'</td>
</tr>
<tr>
<td>LENGTH</td>
<td>67'</td>
<td>9.3'</td>
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</table>

ELECTRONICS

CVA Modified Class "A" Autopilot
*Inertial Navigation System
*Inertial Assist System to be incorporated in 1961
# PERFORMANCE SUMMARY

<table>
<thead>
<tr>
<th>LOADING CONDITION</th>
<th>BASIC MISSION</th>
<th>ALTERNATE MISSION I</th>
<th>ALTERNATE MISSION II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Launch Weight</td>
<td>Ib. 27,217</td>
<td>27,217</td>
<td>27,217</td>
</tr>
<tr>
<td>Fuel</td>
<td>Ib. 7,106</td>
<td>7,106</td>
<td>7,106</td>
</tr>
<tr>
<td>Payload</td>
<td>Ib. 2,920</td>
<td>2,920</td>
<td>2,920</td>
</tr>
<tr>
<td>Wing Loading</td>
<td>lb./sq. ft. 155.6</td>
<td>155.6</td>
<td>155.6</td>
</tr>
<tr>
<td>Launch Weight Less Boost Rockets</td>
<td>Ib. 22,564</td>
<td>22,564</td>
<td>22,564</td>
</tr>
<tr>
<td>Rate of Climb at Sea Level</td>
<td>ft/min 6.772</td>
<td>6.770</td>
<td>6.770</td>
</tr>
<tr>
<td>Time to Climb S.L. to 20,000 ft.</td>
<td>min 3.1</td>
<td>3.1</td>
<td>3.1</td>
</tr>
<tr>
<td>Time to Climb S.L. to 30,000 ft.</td>
<td>min 7.74</td>
<td>7.74</td>
<td>7.74</td>
</tr>
<tr>
<td>Service Ceiling (100 fps)</td>
<td>ft. 29,200</td>
<td>29,200</td>
<td>29,200</td>
</tr>
<tr>
<td>Service Ceiling (100 fps)</td>
<td>ft. 40,000</td>
<td>40,000</td>
<td>40,000</td>
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<tr>
<td>Weight Over Target</td>
<td>lb. 15,658</td>
<td>15,658</td>
<td>15,658</td>
</tr>
<tr>
<td>Engine Thrust</td>
<td>lb. Combat</td>
<td>Combat</td>
<td>Military</td>
</tr>
<tr>
<td>Service Ceiling (100 fps)</td>
<td>ft. 55,200</td>
<td>55,200</td>
<td>55,200</td>
</tr>
<tr>
<td>Range</td>
<td>n.mile 1,040</td>
<td>800</td>
<td>1,040</td>
</tr>
<tr>
<td>Avg. cruise speed</td>
<td>km 1,120</td>
<td>942</td>
<td>942</td>
</tr>
<tr>
<td>Cruise Altitude(s)</td>
<td>ft. 33,000/32,200</td>
<td>29,200/32,000</td>
<td>29,200/32,000</td>
</tr>
<tr>
<td>Distance at H = 2.0</td>
<td>n.mile 647</td>
<td>100</td>
<td>0</td>
</tr>
</tbody>
</table>

## NOTES

(a) Military Thrust.

(b) Military Thrust. Allowance is made for weight reduction during take-off and climb.

(c) Combat Thrust.

**PERFORMANCE BASIS:** Calculations, partial flight tests, and standard atmospheric conditions with zero wind.

**RANGE data are based on engine specification fuel consumption.**
NOTES

BASIC TACTICAL MISSION

WARM-UP AND LAUNCH: At Military rated thrust
ACCELERATE: To M = .94 at sea level with Military rated thrust
CLIMB: To 25,000 feet altitude at M = .94 with Military rated thrust
CLIMB: Continue with afterburner thrust (combat) at M = .94 to 35,000 feet altitude
ACCELERATE: To M = 2.0 at 35,000 feet altitude with afterburner thrust
CLIMB: To 53,000 feet altitude with afterburner thrust at M = 2.0
Cruise Climb: To 58,200 feet altitude at M = 2.0 with afterburner thrust
TARGET: Terminal dive to target
RESERVE FUEL: 200 pounds allowance

ALTERNATE MISSION I (Subsonic cruise in Basic Mission)

WARM-UP AND LAUNCH: At Military rated thrust
ACCELERATE: To M = .94 at sea level with Military rated thrust
CLIMB: To 29,500 feet altitude with Military rated thrust at M = .94
Cruise Climb: To 32,000 feet altitude with Military rated thrust at M = .94
CLIMB: To 35,000 feet altitude with afterburner thrust (combat) at M = .94
ACCELERATE: To M = 2.0 at 35,000 feet altitude with afterburner thrust
CLIMB: To 58,200 feet altitude at M = 2.0 with afterburner thrust
TARGET: Terminal dive to target
RESERVE FUEL: 200 pounds allowance

ALTERNATE MISSION II (Subsonic cruise - Maximum range)

WARM-UP AND LAUNCH: At Military rated thrust
ACCELERATE: To M = .94 at sea level with Military rated thrust
CLIMB: To 29,500 feet altitude with Military rated thrust at M = .94
Cruise Climb: To 32,000 feet altitude with Military rated thrust at M = .94
TARGET: Terminal dive to target
RESERVE FUEL: 200 pounds allowance