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CIA HISTORICAL REVIEW PROGRAM  
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1998

MEMORANDUM FOR: Assistant Chief of Staff, Intelligence,  
Department of the Army

ATTENTION: Combat Intelligence/Development Division,  
Research and Development Branch

SUBJECT: Estimated Costs of Selected Soviet Units

Please find attached the information requested by Dr. [redacted] of Research Analysis Corporation in connection with his project. This request stemmed from [redacted] consultation with Mr. [redacted]. Should you or Dr. [redacted] have any further questions please feel free to contact Mr. [redacted] of our staff.

Assistant Director

Enclosure:  
Estimated Costs of Selected  
Soviet Surface-to-Surface  
Missile and Rocket Units

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**Estimated Costs of Selected Soviet Surface-to-Surface  
Missile and Rocket Units**

**1. Missile Units**

Estimates of initial investment and annual operating costs for Soviet SS-1, SS-2, and SS-3, and SS-4 missile units are presented in this section. Given the uncertainty surrounding the characteristics and the tables of organization and equipment and costs of these Soviet missile units, these estimates should be considered little more than general approximations of the Soviet costs.

The two categories represented, initial investment costs and annual operating costs, differ in important respects from the categories as generally used in weapons systems analysis. The missile costs exclude the cost of warheads and include only the number of missiles required for the basic load of the given unit. There is no allowance either for missiles used up in initial or annual training or for missiles assigned to stockpiles. For the SS-1, and SS-2 the basic unit is a battalion; for the SS-3 and SS-4 costs are estimated per launcher. For all missile units an attempt has been made to account for costs accruing to the basic units as a result of central support activities in those echelons immediately behind the basic units as well as crew-life command and support functions.

The estimates of the costs of the various missile systems follow:

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	<u>SS-1 Bn</u>	<u>SS-2 Bn</u>	<u>SS-3 Launcher</u>	<u>SS-4 Launcher</u>
Manpower - basic unit plus central support area	250	500	250	250
Launcher per unit	6	2	1	1
Missiles per unit	24	6	3	3
<u>Initial Investment</u> (Million 1955 Rubles)				
Missiles <u>a/</u>	240	60	30	30
Other	25.4	20.6	16.0	16.0
<u>Annual Operating Costs</u> (Million 1955 Rubles)				
	7.8	10.0	5.8	5.8

a. C represents the unit cost of missiles (exclusive of warhead) at a given level of cumulative production (X) in one plant. The general formula for calculating C is  $C = K (1-n) / X^n$  where K = unit cost of first missile, X = cumulative production of missiles produced in a given plant, and n = slope of the cumulative average unit cost curve. For the missiles in question the unit costs in thousands of 1955 rubles are

SS-1	$C = (5076) (.7655) / X^{.2345}$
SS-2	$C = (10,800) (.7655) / X^{.2345}$
SS-3	$C = (12,420) (.7655) / X^{.2345}$
SS-4	$C = (16,200) (.7655) / X^{.2345}$

## 2. FROG Units

At this time, the information required for estimating the costs of FROG-3 and FROG-4 is not available in the appropriate detail. For aggregative purposes the production estimates of these two types of rockets is combined and an average price of 56,000 1955 rubles per rocket is applied.