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CIA HISTORICAL REVIEW PROGRAM
RELEASE AS SANITIZED

1999

ECONOMIC AND PRODUCTION IMPLICATIONS OF AN
ASSUMED SOVIET GUIDED MISSILE PROGRAM
1954 to 1963

(OUR CONTRIBUTION BASED ON THE COORDINATED
INTELLIGENCE AGENCIES FOR THE
SPECIAL NSC PROJECT, 1959)

CIA/RR IP-59-16

21 May 1959

THIS MATERIAL CONTAINS INFORMATION
AFFECTING THE NATIONAL DEFENSE OF
THE UNITED STATES WITHIN THE MEANING
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SECS. 793 AND 794, THE TRANSMISSION
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FOREWORD

The set of tables in this contribution provide representative costs and production schedules consistent with an assumed Soviet guided missile program based on the Coordinated Intelligence Assumptions for the NESC Project, 1959.

The methodology used and the limitations prescribed in CIA/RR dated 8 September 1958 remain unchanged in the preparation of this contribution.

~~TOP SECRET~~

Number of Guided Missiles In Operational Stockpile, by Year, 1954-1963
(Numbers of Missiles, Cumulative at End of Year)

TABLE I

Missile Designation	Mid-1963 Stockpile	Year										
		1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	
Surface-to-Surface Ballistic												
SS-1* (100 n.m.)	3,000	100	200	450	350	1,250	2,000	2,750	3,000	3,000	3,000	3,000
SS-2* (200 n.m.)	1,500	40	150	300	450	600	1,050	1,500	1,500	1,500	1,500	1,500
SS-3* (300 n.m.)	750	30	100	150	200	250	450	650	750	750	750	750
SS-4* (700 n.m.)	400			10	60	190	300	400	400	400	400	400
SS-5 (1,100 n.m.)	500					10	20	200	320	400	400	400
SS-6 (ICBM)	750						20	125	375	625	625	675
Surface-to-Surface Naval												
SS-7 (200 n.m. Submarine)	250					20	64	155	250	250	250	250
SS-3 (1,000 n.m. Submarine)	150			4	2						20	360
Air-to-Surface												
AS-1* (55 n.m.)	450					337	450	450	450	450	450	450
AS-2* (250 n.m.)	700				112				175	525	875	875
Air-to-Air												
AA-1*	-0-					3,800	3,800	3,600	1,600	12,000	12,000	12,000
AA-2	12,000					4,800	6,700	3,600	10,500	17,600	17,600	17,600
AA-3	14,000					2,900	13,100	23,500	23,500	4,200	10,400	10,400
AA-4	4,200					1,400		1,400	4,200	4,200	4,200	4,200

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TABLE I
(Continued)

Number of Guided Missiles in Operational Stockpile, by Year, 1954-1963
(Numbers of Missiles, Cumulative at End of Year)

MIE 11-5-58 Designation	MIA-1963 Stockpile	Year										
		1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	
<u>Surface-to-Air (Ground-Launched)</u>												
SA-1 (Hoscor Sites)	-0-	2,640	7,900	13,400	12,900	8,600	2,600	15,178	20,459	21,750	13,750	
SA-2	17,500				527	4,618	9,899	3,700	11,200	18,250	26,250	
SA-3*	22,500								6,800	20,400	34,000	
SA-4*	27,000											
<u>Surface-to-Air (Naval-Launched)</u>												
SA-6 (Naval)	1,300							150	450	850	1,150	1,450
SA-7 (Naval)	700								100	400	1,000	

and appearing in 1970 assumptions - repeated here as basis for costing.

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TABLE II

Number of Operational Units Deployed and Equipped
with Missiles, by Year, 1954-1963
(Number of Units, Cumulative at End of Year)

Configuration	NAVY 11-5-58										
	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	
<u>Ship-to-Surface Ballistic</u>											
SS-1 (100 n.m.)	1	4	9	17	25	40	55	60	60	60	60
SS-2 (200 n.m.)	1	3	6	9	12	21	30	30	30	30	30
SS-3 (300 n.m.)	1	2	3	4	5	9	13	15	15	15	15
SS-4 (700 n.m.)			2	11	21	32	40	40	40	40	40
SS-5 (1,100 n.m.)					2	9	20	32	44	56	56
SS-6 (ICBM)						3	12	37	62	87	87
<u>Surface-to-Surface Naval</u>											
SS-7 (200 n.m. Submarine)			1	2	4	10	25	36	35	35	35
SS-8 (1,000 n.m. Submarine)						1	2	7	10	10	13
<u>Air-to-Surface</u>											
AS-1 (55 n.m.)				22	67	90	90	90	90	90	90
AB-2 (250 n.m.)								35	105	175	175
<u>Air-to-Air</u>											
AA-1			120	360	480	430	450	200	1,520	1,520	1,520
AA-2			120	360	600	840	1,030	1,320	1,520	1,520	1,520

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TABLE II
(continued)

Number of Operational Units Deployed and Equipped
with Missiles, by Year, 1954-1963
(Number of Units, Cumulative at End of Year)

MIR 11-5-58 Designation	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963
AA-3					360	1,640	2,940	2,940	2,200	1,300
AA-4							200	600	600	600
<u>Surface-to-Air (Ground-Launched)</u>										
SA-1	11	33	56	54	36	11	115	155	165	164
SA-2				4	35	75	25	75	125	175
SA-3								50	150	250
SA-4										
<u>Surface-to-Air (Naval-Launched)</u>										
SA-6										
Destroyers						1	7	13	19	25
Cruisers						1	1	2	2	2
SA-7										
Cruisers								1	4	10

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TABLE VII

Summary of Offensive Missile Production* and Units Deployed by Missile and Year, 1954-1963

NIE 11-5-58 Designation	Missiles Produced Units Deployed	Monthly Missile Production at Peak Rate	Number of Months at Peak Rate	Year											Totals		
				1954	1955	1956	1957	1958	1959	1960	1961	1962	1963				
SS-1 (100 n.m.)	Missiles Produced Units Deployed	60	30	112	288	400	500	500	700**	700	400						3600 60
SS-2 (200 n.m.)	Missiles Produced Units Deployed	42	24	50	150	200	200	200	500**	500							1800 30
SS-3 (350 n.m.)	Missiles Produced Units Deployed	19	30	32	68	75	75	75	225**	225	125						900 15
SS-4 (700 n.m.)	Missiles Produced Units Deployed	11	39	1	1	24	105	132	132**	110							500 40
SS-5 (1,100 n.m.)	Missiles Produced Units Deployed	12	51					24	109**	110							710 56
SS-6 (ICBM)	Missiles Produced Units Deployed	25	36						7	11							1030 87
SS-7 (200 n.m., Sub.)	Missiles Produced Converted Submarines New Conventional Submarines	10	24			5	5	15	48	116	116						310 14

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TABLE III
(Continued)

Summary of Offensive Missile Production^a and Units
Deployed by Missile and Year, 1954-1963

Missile Designation	Monthly Missile Production at Peak Rate	Number of Months at Peak Rate	Year											Totals
			1954	1955	1956	1957	1958	1959	1960	1961	1962	1963		
SS-1 (1,000 n.m. Sub.)	40	7						1	3	3	50	430	3	480
AS-1 (55 n.m.)	25	18				150	300	150						600
AS-2 (250 n.m.)	44	24			22	45	23			262	525	525	70	1312
										35	70	70		175

^a Production figures in this table represent total production which, in addition to operational deliveries (shown in Table I), allows for missiles allocated for static and laboratory tests, production slippage, other degradation of all types and missiles expended for training purposes. Change from radar/radio command to all inertial systems.

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TABLE IV

Summary of Defensive Missile Production and Units Deployed by Missile and Year, 1954-1963

MIR II-5-S3 Designation	Monthly Missile Production at Peak Rate	Number of Months at Peak Rate	Year										Totals						
			1954	1955	1956	1957	1958	1959	1960	1961	1962	1963							
AA-1	Missiles Produced Aircraft Deployed	280	18		1,630 120	3,360 240	1,630 120												6,720 430
AA-2	Missiles Produced Aircraft Deployed	280	72		1,630 120	3,360 240	3,360 240												21,290 1,520
AA-3	Missiles Produced Aircraft Deployed	1,150	24				3,700 360	13,500 1,200	13,800 1,300										31,000 2,940
AA-4	Missiles Produced Aircraft Deployed	420	12							2,500 200	5,000 400							7,500 600	
SA-1	Missiles Produced Units Deployed (Moscow)	580	24	3,470 11	6,940 22	6,940 23												17,360 56	
SA-2	Missiles Produced Units Deployed	560	42				675 4	5,237 31	6,759 40	6,759 40	6,759 40	1,690 10						27,879 165	
SA-3	Missiles Produced Units Deployed	800	36							4,800 25	9,600 50	9,600 50	9,600 50					33,500 175	

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TABLE IV
(Continued)

Summary of Defensive Missile Production and Units
Deployed by Missile and Year, 1954-1963

NIE 11-5-58 Designation	Monthly Missile Production at Peak Rate	Number of Months at Peak Rate	Year											Totals											
			1954	1955	1956	1957	1958	1959	1960	1961	1962	1963													
SA-4	1,450	24																			8,700	17,400	17,400	43,500	
SA-6 (Naval)	30	54																			300	360	360	1,740	
SA-7 (Naval)	60	12																			1	6	6	25	
																						120	360	720	1,200
																						1	3	6	10

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TABLE V

Comparison of Total Cost of NESC Project 1959 Program and Projected
Soviet Military Expenditure by Year, 1954-1963
(Billions of 1957 Dollars)

	<u>1954</u>	<u>1955</u>	<u>1956</u>	<u>1957</u>	<u>1958</u>	<u>1959</u>	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>
USSR Military Expenditures	41.5	43.2	43.1	40.3	41.0	44.4	47.9	51.6	54.8	55.8
NESC 1959 Program	0.4	0.8	1.1	1.4	2.5	5.0	8.1	10.3	12.2	14.3
NESC 1959 Program as percent of Military Expenditures	1.0	1.9	2.6	3.5	6.1	11.3	16.9	20.0	22.3	25.6

TABLE VI

Total Costs of NESC Project 1959 Program
by Category of Missiles
(Billions of 1957 Dollars)

	<u>Initial Investment</u>	<u>Operating Costs</u>	<u>Total</u>	<u>Percent of Total</u>
Surfaces-to-Air Ground-Launched	13.0	5.4	18.4	32.7
Surface-to-Air Ship-Launched	1.8	0.4	2.2	3.9
Air-to-Air	1.7	1.9	3.6	6.4
Air-to-Surface	0.5	0.5	1.0	1.8
Surface-to-Surface (up to and including 700 n.m.)	4.0	5.6	9.6	17.2
Surface-to-Surface Submarine-Launched	2.5	0.3	2.8	5.0
IRBM (1,100 n.m.)	3.2	1.9	5.1	9.0
ICBM (5,500 n.m.)	10.2	3.2	13.4	24.0
TOTAL	<u>35.9</u>	<u>19.2</u>	<u>55.1</u>	<u>100.0</u>

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TABLE VII
Yearly Costs of NESG Project 1959 Program, 1954-1963
(Billions of 1957 Dollars)

	<u>1954</u>	<u>1955</u>	<u>1956</u>	<u>1957</u>	<u>1958</u>	<u>1959</u>	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>Total</u>
Initial Investment	.4	.7	.9	.9	1.8	3.9	6.2	7.0	7.3	7.8	36.9
Annual Operating		.1	.2	.5	.7	1.1	1.9	3.3	4.9	6.5	19.2
TOTAL	<u>.4</u>	<u>.8</u>	<u>1.1</u>	<u>1.4</u>	<u>2.5</u>	<u>5.0</u>	<u>8.1</u>	<u>10.3</u>	<u>12.2</u>	<u>14.3</u>	<u>56.1</u>

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TABLE VIII

Total Investment and Operating Costs of NESC
Project 1959 Program by Missile System

NIE 11-5-53 Designation	Investment Costs		Operating Costs		Total Costs	
	Billions 1957 Dollars	Percent of Total	Billions 1957 Dollars	Percent of Total	Billions 1957 Dollars	Percent of Total
SS-1	1.2	3.2	0.8	4.2	2.0	3.6
SS-2	0.7	1.9	0.6	3.1	1.3	2.3
SS-3	0.4	1.1	0.7	3.6	1.1	1.9
SS-4	1.7	4.6	3.5	18.2	5.2	9.3
SS-5	3.2	8.7	1.9	9.9	5.1	9.1
SS-6	10.2	27.7	3.2	16.7	13.4	23.9
SS-7	0.9	2.4	0.1	0.6	1.0	1.8
SS-8	1.6	4.3	0.2	1.0	1.8	3.2
AS-1	0.2	0.5	0.3	1.6	0.5	0.9
AS-2	0.3	0.8	0.2	1.0	0.5	0.9
AA-1	0.2	0.5	0.1	0.6	0.3	0.5
AA-2	*	--	0.2	1.0	0.2	0.4
AA-3	1.2	3.2	1.4	7.3	2.6	4.6
AA-4	0.3	0.8	0.2	1.0	0.5	0.9
SA-1	1.4	3.8	1.2	6.2	2.6	4.6
SA-2	2.2	6.0	2.2	11.4	4.4	7.8
SA-3	3.8	10.4	1.0	5.2	4.8	8.6
SA-4	5.6	15.3	1.0	5.2	6.6	11.8
SA-6	0.9	2.4	0.3	1.6	1.2	2.1
SA-7	0.9	2.4	0.1	0.6	1.0	1.8
TOTAL	36.9	100.0	19.2	100.0	55.1	100.0

* Less than 50 million dollars.