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FIGURE 31. LAUNCH SITES K1, K2/13, AND K3/20, LAUNCH COMPLEX K, TYURATAM.

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SOVIET IRBM/MRBM DEPLOYMENT

[redacted] photography since our 17th Revision covers 12 of the 14 IRBM, and 62 of the 68 MRBM complexes. One MRBM soft site has been abandoned and 3 additional fixed field sites have been identified. These changes are reflected in Tables 1, 4, 5, 7, 8, and 9. Information on surface-to-surface launch sites at the Kapustin Yar Missile Test Center is given in Table 6. Locations of deployed IRBM/MRBM complexes are shown in Figure 34. Typical configuration of the launch sites and the weapons system associated with each are depicted in Figure 35. The composition of IRBM/MRBM complexes is given in Table 9.

IRBM DEPLOYMENT.

Current Force Level

The IRBM element of the Soviet Strategic Rocket Forces remains at 33 sites containing a total of 112 launchers, including 54 in a hard configuration*. Of these launchers, 109, including 51 silos, are estimated to be operational.

Other Developments

In our 17th Revision we reported that the Bereza IRBM site contains only 2 launch pads rather than the 4 normally associated with IRBM/MRBM soft sites. As a result of this discovery, we are reviewing available photography of all IRBM/MRBM soft sites to determine if any other "half sites" exist. This review has been 40 percent completed with negative results.

MRBM DEPLOYMENT

Current Force Level

The Soviet MRBM force currently consists of 156 sites containing 624 launchers.

*One of her currently carries 30 sites. Novosyoyevskii and Karakhabda are not considered abandoned.

including 84 in a hard configuration. All are operational. These figures represent an overall reduction of 4 launchers from those carried in our 17th Revision and reflect the inactivation of a soft site at Sledyuki.

Fixed Field Sites

Three additional fixed field sites have been identified on [redacted] photography since our 17th Revision, bringing the total identified to date to 75. A list of these sites is given in Table 7.

Two of the newly identified sites (Figure 36) are associated with the Borshchev MRBM Complex and are designated Skalapodolskaya 1 and 2. Each contains 4 launch positions. Skalapodolskaya 1 can be negated on Mission [redacted] and is first visible on [redacted] Skalapodolskaya 2 is both negated and first seen on Missions [redacted]

The third new fixed field site (Figure 37), designated the Vinkovtsy site, contains only 1 launch position. The second such site associated with the Kamenets-Podolskiy MRBM Complex, it can be negated on [redacted] in [redacted] is identified on Mission [redacted]

SITES WITHOUT SUPPORT FACILITIES

[redacted] revealed that all structures within the Sledyuki MRBM Launch Site (Figure 38) have been removed since [redacted] Poor image quality on subsequent missions precludes determination of the dates and sequence of removal. The site is considered abandoned and is dropped from our tables.

The Sledyuki site was 1 of 9 singly deployed sites which were uniquely lacking the usual administration and housing facilities. Five of these sites (Kraskino, Marina Gorka, Rozhdestvenka, Sledyuki, and Uzhgorod) were MRBM launch

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facilities and the remaining 4 (Bayram-Ali, Ramoye, Traktovyy, and Zhuravka) were IRBM facilities. They differed from other IRBM MRBM launch sites in that, instead of a specific associated support facility, they had only 2 barracks-type buildings. In addition, within each of the 9 launch sites, a receiving, inspection, and maintenance (RIM) building was positioned on an inner road inline with the missile-ready building. The RIM building, smaller than the associated ready building, was not earth mounded and had an open frame-work extension at one end which may have been a support for an overhead crane.

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In previous revisions, we noted that 2 of the sites (in addition to Sledyuki) had been abandoned, the Bayram-Ali IRBM Launch Site and the Rozhdestvenka MRBM Launch Site. Evidence of dismantling is also apparent at 4 of the other IRBM sites (Kraskino, Ramoye, Traktovyy, and Zhuravka). Pending further coverage, we are continuing to carry these 4 sites and those at Marina Gorka and Uzhgorod as part of the operational force. We expect, however, that all will be phased out in the near future.

We have never been able to determine the role of these sites in the Strategic Rocket Forces. Numerous personnel and vehicular movements have been observed in and around the Bayram-

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Ali and Rozhdestvenka Launch Sites on photography. Their presence, and the fact that military installations are located in the vicinity of both sites, suggests a training function. However, a missile exercise has never been observed at any of the 9 sites. In fact, activity and/or equipment has only been visible on 2 occasions: possible erectors and prime movers

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at Bayram-Ali in and vehicles on the access road to Rozhdestvenka in. The time frame of deployment of these

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At Launch Area 1C (Figure 50), the rail-served Launch Sites 1C2 and 1C3 are now also road served. A rail-served probable missile erector launcher can now be identified on each pad. Equipment vehicles are also present on the pad at Launch Site 1C1.

At Launch Area 2C (Figure 51), an SS-4 or SS-5 missile exercise is underway at Launch site 2C2. A missile transporter and an erector are positioned on the launch pad, as are several probable support vehicles. The permanent facilities at this launch site remain unchanged since

At Launch Area 3C, a probable missile exercise is underway, with several vehicles pieces of equipment present on the launch pad and on the southwestern dumbbell area (Figure 51).

Modification or construction of Launch Site 4C1 is still continuing (Figure 52). The south-

west silo is open; the excavation to the southwest has not been backfilled; and a tall structure is again positioned over the northwest silo. The former 4C support area is now completely razed. Launch Site 4C2 (Figure 52) remains unchanged.

At Launch Area 5C, the southern pad at Launch Site 5C1 is heavily scarred, indicating that this site is either being dismantled or undergoing extensive modification (Figure 52).

No significant activity or change can be identified at Launch Complexes A, L, G, and H.

Test Range SSM Activity

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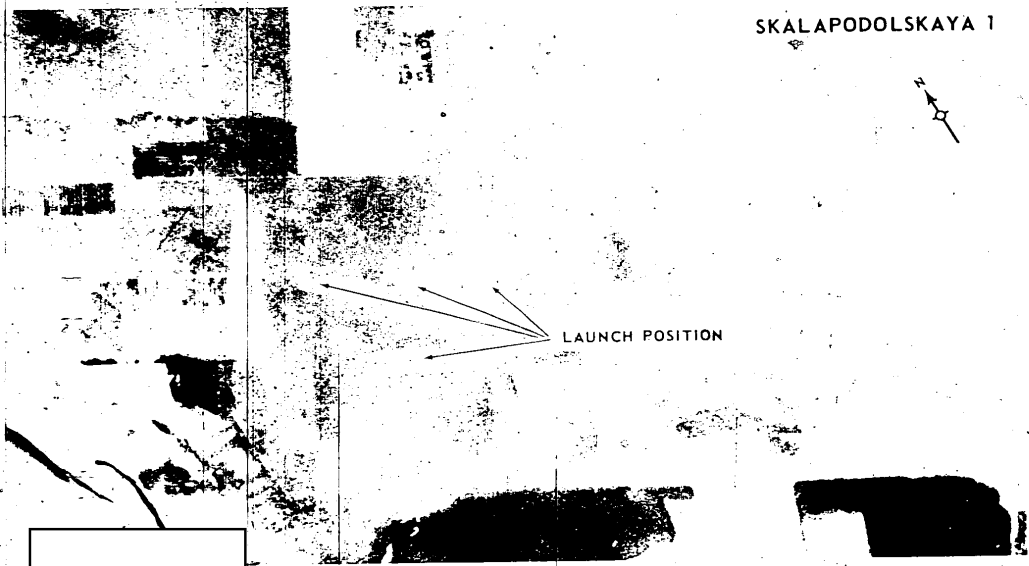
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[REDACTED]

[REDACTED]



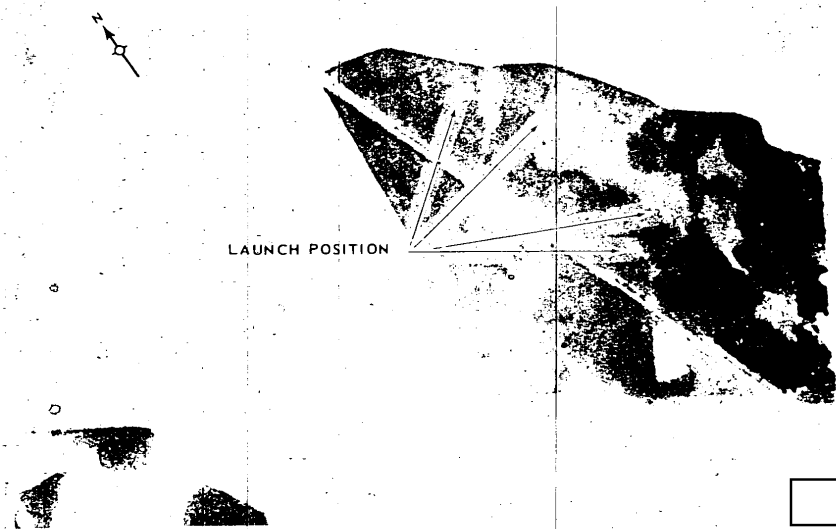
SKALAPODOLSKAYA 1

LAUNCH POSITION

[REDACTED]

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SKALAPODOLSKAYA 2



LAUNCH POSITION

FIGURE 36. SKALAPODOLSKAYA 1 AND 2 FIXED FIELD SITES. BORSHCHEV MRBM COMPLEX.

[REDACTED]

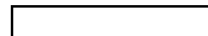
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LAUNCH POSITION

FIGURE 37. VINKOVTSY FIXED FIELD SITE, KAMENETS-PODOLSKIY MRBM COMPLEX.

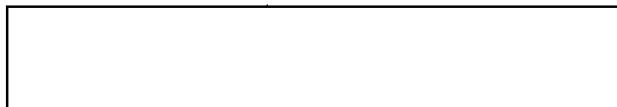
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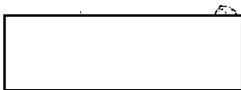
FIGURE 38. ABANDONED 'LEDYCHI' LAUNCH SITE, RYKHOV MRBM COMPLEX.

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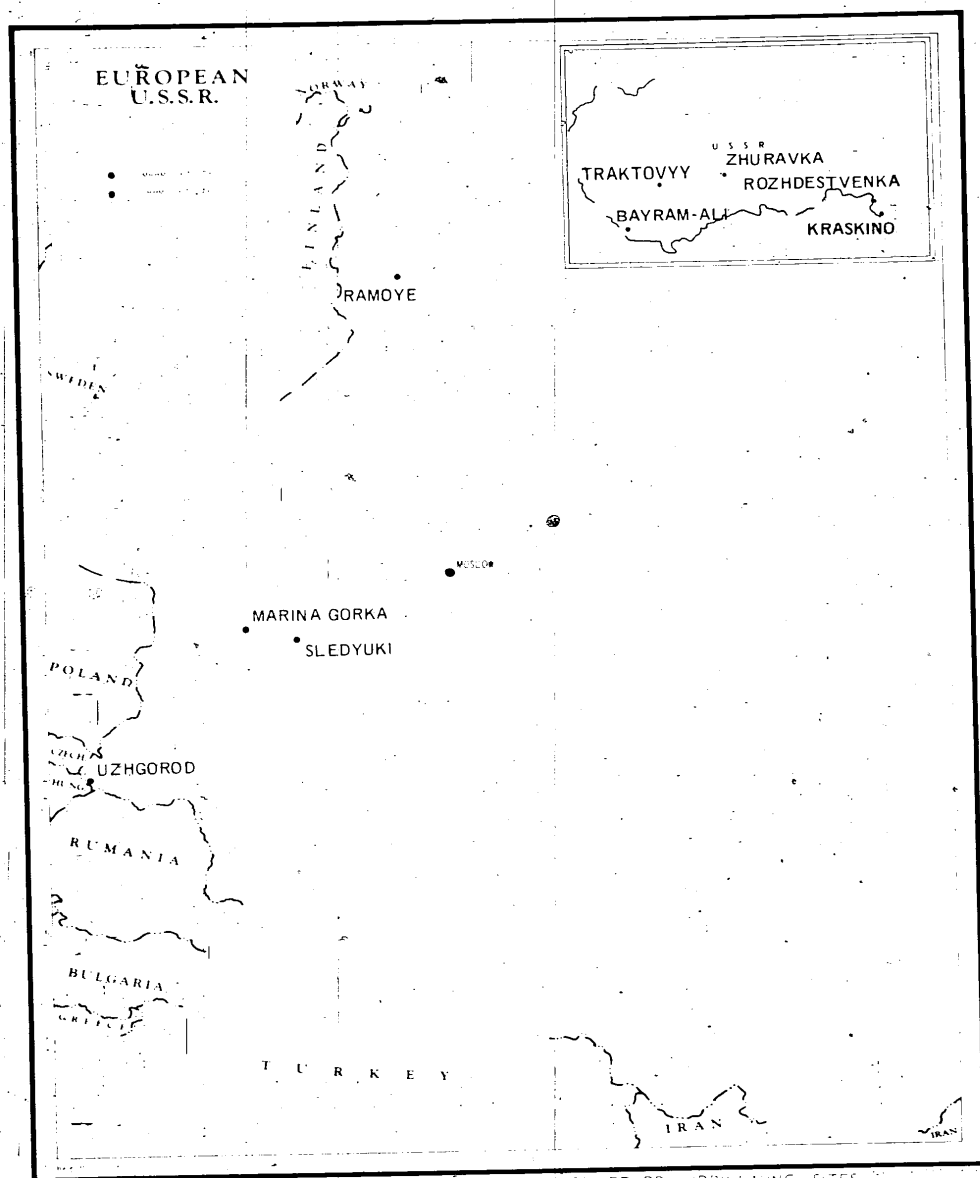
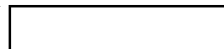
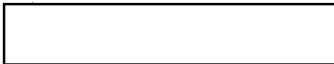
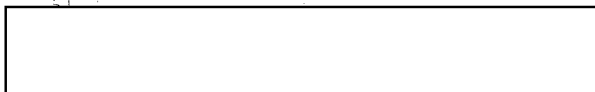


FIGURE 39. LOCATIONS OF SINGLY DEPLOYED SOVIET IRBM/HRBM LAUNCH SITES

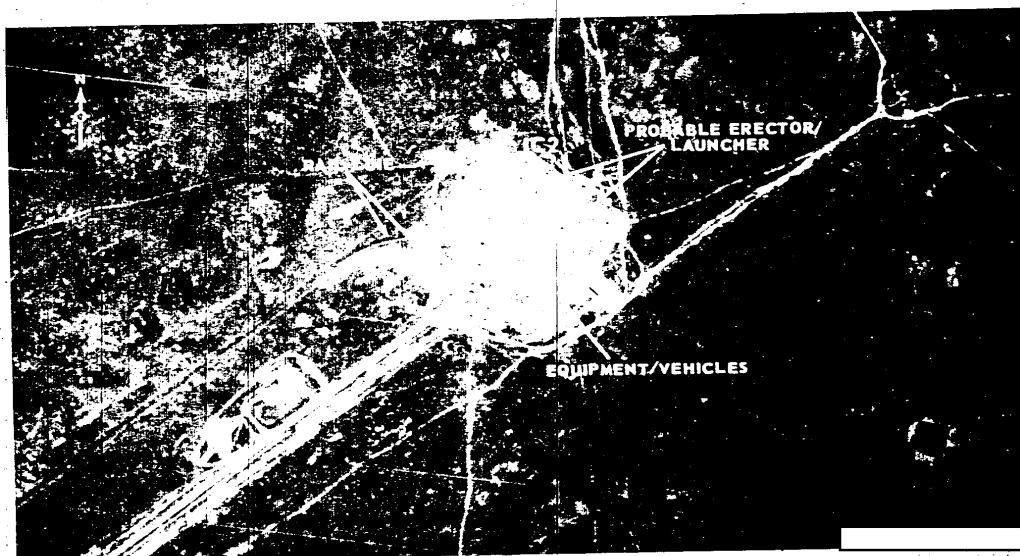
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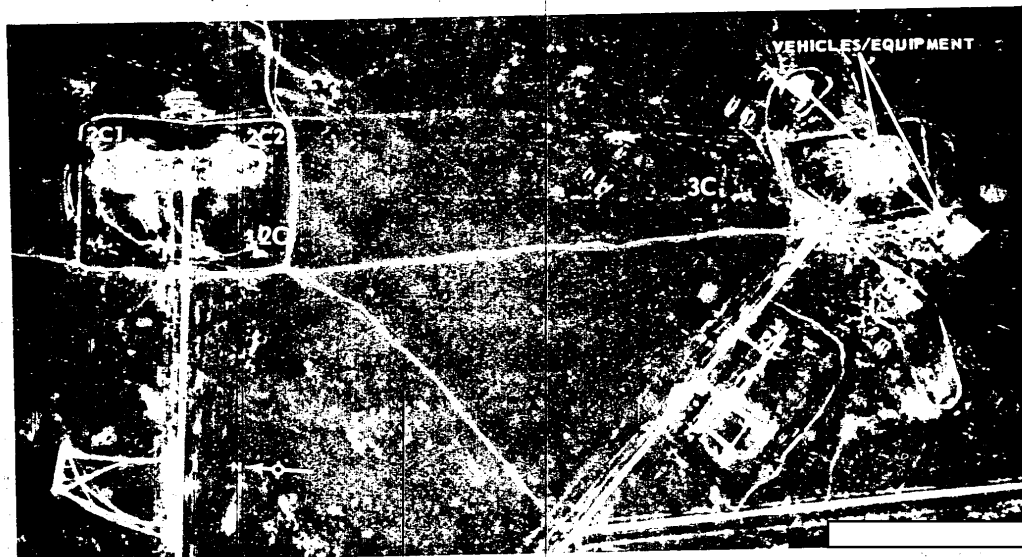
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FIGURE 10. LAUNCH AREA 10C, HARLOT IN WAR.



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FIGURE 11. LAUNCH AREA 10C AND 30C, HARLOT IN WAR.

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FIGURE 52 LAUNCH AREAS 4C AND 5C (APRIL 1971)

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TABLE 1. SUMMARY OF ESTIMATED STATUS OF IDENTIFIED ICBM, IRBM, AND MRBM
LAUNCHERS AT DEPLOYED COMPLEXES

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Type	Sites	Launchers	Operational	U/C	Type	Sites	Launchers	Operational	U/C
ICBM					IRBM				
IA	3	4	4	0	III	15	58	58	0
IB	2	4	0	4	IV	18	54	51	3
IIA	5	10	10	0	TOTAL	33	112	109	3
IIB	29	58	58	0	MRBM				
IIC	7	14	14	0	I	84	336	336	0
IID	30	60	60	0	II	51	204	204	0
IIIA	23	69	69	0	IV	21	84	84	0
IIIB	3	9	9	0	TOTAL	156	624	624	0
IIIC**	41	41	0	41	GRAND				
IIID***	72	72	0	72	TOTAL	189	736	733	3
TOTAL	215	341	224	117					

*See Tables 2, 4, and 5 for details. Figures include 3 launch silos at Type IIIA and IIIB ICBM and Type IV IRBM sites, and 4 launch silos at Type IV MRBM sites. Type IIIC and IIID ICBM sites contain single silos.

**Figures do not include 2 sites carried in the possible category.

***Figures do not include 12 sites carried in the possible category.

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TABLE 2. SUMMARY OF THE STATUS OF THE SITES

Location*	Site Number	Coordinates	Type of Site	Number of Launchers		Site Designated		First Coverage		Latest Coverage		Stage of Completion		Estimated Quarter Site Operational				Estimated Status
				Soft	Hard	Date	Map	Date	Map	Date	Map	Date	Map	Comr	1st	2nd	3rd	
ALYSK				1														
	Site A(1)	82-27N 82-35E	III	1										Mid		65		U/C
	Site B(2)	82-29N 82-40E	III	1										Mid		65		U/C
	Site C(3)	82-33N 82-42E	III	1										Mid	66			U/C
	Site D(4)	82-32N 82-34E	III	1										Mid	66			U/C
	Site E(5)	82-35N 82-30E	III	1										Mid	66			U/C
TOMILANOVSKIY				1														
	Site A(4)	77-11N 59-07E	III	1										Mid	66			U/C
	Site B(3)	81-08N 59-30E	III	1										Mid	66			U/C
	Site C(2)	81-01N 86-44E	III	1										Mid	66			U/C
	Site D(1)	80-58N 59-32E	III	1										Early	66			U/C
DROVYANAYA				2														
	Site A(1)	91-25N 113-00E	III	2										Complete	63			Operational
	Site B(2)	91-25N 113-00E	III	2										Complete	64			Operational
	Site C(4)	91-25N 113-00E	III	2										Complete	64			Operational
	Site D(3)	91-25N 113-00E	III	2										Complete	64			Operational
	Site E(5)	91-25N 112-50E	III	1										Complete	64			Operational
	Site F(6)	91-25N 112-50E	III	1										Mid	66			U/C
	Group G (7-14)	91-31N 113-04E	III	8										Mid	66			U/C
GIMKAYAYA				2														
	Site A(1)	96-20N 92-19E	III	2										Complete	64			Operational
	Site B(2)	96-25N 92-27E	III	2										Complete	64			Operational
	Site C(3)	96-20N 92-13E	III	1										Complete	64			U/C
	Group D (4-11)	96-11N 92-13E	III	5										Early	65			U/C
IMILNATSELE				1														
	Site A(1)	91-06N 66-02E	III	1										Mid	66			U/C
	Site B(2)	91-10N 66-06E	III	1										Mid	66			U/C
	Site C(3)	91-07N 66-13E	III	1										Mid	66			U/C
	Site D(4)	91-11N 66-13E	III	1										Mid	66			U/C
	Site E(5)	91-11N 66-09E	III	1										Mid	66			U/C
HAIKAS				2														
	Site A(1)	56-56N 86-21E	III	2										Complete	63			Operational
	Site B(2)	57-01N 85-19E	III	2										Complete	63			Operational
KARLALY				1														
	Site A(1)	53-01N 60-20E	III	1										Mid	66			U/C
	Site B(2)	52-56N 60-31E	III	1										Mid	66			U/C
	Site C(3)	52-55N 60-24E	III	1										Mid	66			U/C
	Site D(4)	52-51N 60-27E	III	1										Mid	66			U/C
	Site E(5)	53-00N 60-19E	III	1										Mid	66			U/C
	Site F(6)	53-00N 60-18E	III	1										Mid	66			U/C
	Site G(7)	53-09N 60-42E	III	1										Early	66			U/C
KONTROMA				2														
	Site A(1)	56-02N 41-22E	III	2										Complete	62			Operational
	Site B(2)	56-02N 41-07E	III	2										Complete	62			Operational
	Site C(3)	57-59N 41-09E	III	2										Complete	63			Operational
	Site D(4)	56-59N 41-40E	III	2										Complete	63			Operational
	Site E(5)	57-58N 41-14E	III	2										Complete	63			Operational
	Site F(6)	57-55N 41-10E	III	2										Complete	64			Operational

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Location*	BE Number	Coordinates	Type of Site	Number of Launchers Soft Hard	Site Negated		First Coverage		Latest Coverage		Stage of Completion as of Last Usable Coverage		Estimated Quarter				Estimated Status	
					Date	Men	Date	Men	Date	Men	Date	Men	Completed	1st	2nd	3rd		4th
YURY																		
Site A(2)		59-10N 49-52E	HA	2									Complete				61	Operational
Site B(1)		59-09N 49-40E	HA	1									Complete				61	Operational
Site C(3)		59-08N 49-25E	HA	1									Complete	62			62	Operational
Site D(4)		59-10N 49-22E	HA	1									Complete		62		62	Operational
Site E(5)		59-21N 49-17E	HA	2	3								Complete	63			63	Operational
Site F(7)		59-21N 49-14E	HA	2	3								Complete	64			64	Operational
Site G(8)		59-04N 49-51E	HA	2	3								Complete				63	Operational
Site H(1)		59-11N 49-25E	HA	2									Complete	64			64	Operational
Site I(1)		59-12N 49-25E	HA	2									Complete	64			64	Operational
Site J(1)		59-08N 49-45E	HA	2									Complete	64			64	Operational
Site K(10)		59-15N 49-10E	HA	2	3								Complete	64			64	Operational
ZHANGJI-LUHL																		
Site A(1)		49-12N 81-00E	HA	1									Mid				65	L/C
Site B(2)		49-10N 80-50E	HA	1									Mid				65	L/C
Site C(3)		49-11N 80-54E	HA	1									Mid				65	L/C
Site D(4)		49-10N 81-04E	HA	1									Mid		66		66	L/C
Site E(5)		49-08N 81-08E	HA	1									Mid		66		66	L/C
Site F(6) Probable		49-08N 80-58E	HA	1									Early		66		66	L/C
Totals					215	150	191											

*1D1 site designators are indicated in parentheses.

1. Not considered an operational KRM site (see 10th Revision).

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TABLE 4. SUMMARY EVALUATION OF SOVIET IRBM DEPLOYMENT

LOCATION*	BE NUMBER	COORDINATES	TYPE	NO OF PADS LAUNCHERS	DATE OR LATEST PHOTOGRAPHY	ESTIMATED CONSTR STATUS
AKTYUBINSK Launch Complex PETROVSKIY		50-00-30N 56-58-00E	IV	3		Complete
BELOMORSK Launch Complex RAMOYE		61-25-45N 34-18-15E	III	4		Complete
FEDOROVKA Launch Complex TRAKTOVYY		53-25-15N 62-23-00E	III	4		Complete
GELLI Launch Complex KAKASHURA GELLI PARUL		42-38-15N 47-27-00E 42-36-30N 47-28-30E 42-47-30N 47-23-00E	IV IV IV	3 3 3		Complete Complete Complete
GRANOV Launch Complex GRANOV 1 GRANOV 2 KALNIK		48-56-15N 29-30-15E 48-50-00N 29-28-15E 48-59-30N 29-21-15E	III IV IV	4 3 3		Complete Complete Complete
KROLEVETS Launch Complex KROLEVETS 1 KROLEVETS 2 BEREZA		51-36-45N 33-29-30E 51-10-15N 33-04-15E 51-13-15N 33-13-15E	III III III	4 4 2		Complete Complete Complete
LEBEDIN Launch Complex LEBEDIN 1 LEBEDIN 2 LEBEDIN 3		50-33-00N 31-25-15E 50-35-15N 31-24-30E 50-38-00N 31-27-30E	III III III	4 4 4		Complete Complete Complete
NIGRANDE Launch Complex NIGRANDE SKRUND VAINODE		56-31-00N 22-02-15E 56-35-30N 21-19-15E 56-28-30N 21-50-15E	III IV IV	4 3 3		Complete Complete Complete
NOVOSYOEYVKA Launch Complex NOVOSYOEYVKA 1 NOVOSYOEYVKA 2		44-11-45N 133-26-15E 44-07-15N 133-28-30E	III IV	4 3		Complete Complete
PERVOMAYSK Launch Complex KAMENNY MOST SEMEHOVKA 1 SEMEHOVKA 2		47-58-00N 30-53-15E 47-58-45N 30-59-00E 47-53-30N 30-58-15E	IV IV IV	3 3 3		Complete Complete Complete

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TABLE A. (Continued)

LOCATION	BE NUMBER	COORDINATES	TYPE	NO OF PADS LAUNCHERS	DATE OF LATEST PHOTOGRAPHY	ESTIMATED CONSTR STATUS
SARY OZEK Launch Complex						
KARA BABAU 1		41-32-00N 77-16-15E	III	1		Complete
KARA BABAU 2		41-31-00N 77-58-45E	IV	3		Complete
KARA BABAU 3		41-30-15N 77-41-15E	IV	3		Complete
SMORGON Launch Complex						
SMORGON 1		54-31-45N 26-17-30E	III	1		Complete
SMORGON 2		54-26-00N 26-18-30E	IV	3		Complete
SMORGON 3		54-36-15N 26-22-30E	III	1		Complete
TAYBOLA Launch Complex						
TAYBOLA 1		68-28-00N 33-15-30E	IV	3		Complete
TAYBOLA 2		68-30-30N 33-23-15E	IV	3		Complete
TAYBOLA 3		68-26-00N 33-29-15E	IV	3		Undetermined
ZHURAVKA Launch Complex						
ZHURAVKA		54-36-30N 76-39-15E	III	1		Complete

*TDI site designators have been adopted for IRBM launch sites.

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TABLE 5. SUMMARY EVALUATION OF SOVIET ICBM DEPLOYMENTS

LOCATION	BE NUMBER	COORDINATES	TYPE	NO OF PADS LAUNCHERS	DATE OF LATEST PHOTOGRAPHY	ESTIMATED CONSTR STATUS
AKHTYRKA Launch Complex AKHTYRKA 1		50-18-00N 34-50-15E	II	1		Complete
AKHTYRKA 2		50-22-00N 34-57-00E	II	1		Complete
ALEKSEI Launch Complex LEJASCEMS 1		57-24-30N 26-41-15E	II	1		Complete
RU-SKI		57-25-15N 26-50-00E	II	1		Complete
LEJASCEMS 2		57-13-00N 26-33-30E	IV	1		Complete
AVASTASYEYKA Launch Complex AVASTASYEYKA 1		18-34-15N 135-37-15E	II	1		Complete
AVASTASYEYKA 2		18-35-15N 135-41-00E	II	1		Complete
BAUTA Launch Complex BAUTA 1		18-01-15N 29-34-00E	II	1		Complete
BAUTA 2		18-07-00N 29-34-30E	II	1		Complete
BARANO ORENBURGSKOYE Launch Complex SOFIYE ALEKSEYEVSKOYE BARANO ORENBURGSKOYE		14-16-15N 131-22-30E	I	1		Complete
		14-19-15N 131-30-15E	I	1		Complete
BELOKOROVICH Launch Complex OLEVSK 1		51-08-15N 28-03-15E	I	1		Complete
OLEVSK 2		51-10-30N 27-59-30E	I	1		Complete
RU-DNYA ZLOTINSKAYA		51-03-30N 28-07-30E	IV	1		Complete
BORSHCHEV Launch Complex SKALA PODOLSKAYA 1		18-51-00N 26-08-30E	I	1		Complete
SKALA PODOLSKAYA 2		18-52-15N 26-03-30E	I	1		Complete
BREST Launch Complex BREST 1		51-18-15N 24-00-15E	II	1		Complete
BREST 2		51-51-15N 24-01-15E	II	1		Complete
BRODY Launch Complex BRODY 1		50-06-00N 26-12-15E	IV	1		Complete
BRODY 2		50-12-16N 26-05-00E	I	1		Complete
BERESTETCHIKO		50-20-00N 26-05-30E	I	1		Complete
DERAZHNYA Launch Complex DERAZHNYA 1		19-21-00N 27-26-30E	II	1		Complete
DERAZHNYA 2		19-26-15N 27-29-00E	II	1		Complete
KHIMELNITSKIY		19-21-15N 27-08-15E	IV	1		Complete

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TABLE 5* (Continued)

LOCATION	BE NUMBER	COORDINATES	TYPE	NO OF PADS LAUNCHERS	DATE OF LATEST PHOTOGRAPHY	ESTIMATED CONSTR STATUS
DISNA Launch Complex						
DISNA		55-35-15N 28-16-00E	I	1		Complete
ZELKI		55-35-15N 28-24-30E	I	1		Complete
BORKOVICH		55-41-15N 28-27-00E	II	1		Complete
DOLINA Launch Complex						
DOLINA 1		49-03-30N 24-03-30E	I	1		Complete
DOLINA 2		49-06-45N 24-08-30E	I	1		Complete
BOLEKHOV		49-06-45N 23-57-15E	IV	1		Complete
DROGOBYCH Launch Complex						
MEDENTSIA		49-22-15N 23-45-30E	I	1		Complete
DROGOBYCH		49-25-30N 23-34-15E	I	1		Complete
STRYY		49-16-45N 23-43-00E	IV	1		Complete
DYATLOVO Launch Complex						
DYATLOVO		53-32-45N 25-16-45E	I	1		Complete
BEREZOVKA		53-35-30N 25-17-30E	I	1		Complete
ZBLYANY		53-35-45N 25-27-30E	II	1		Complete
GOMEL Launch Complex						
BORKHOV 1		52-18-30N 30-42-45E	II	1		Complete
BORKHOV 2		52-24-45N 30-39-00E	II	1		Complete
GREISK Launch Complex						
GREISK 1		53-14-15N 27-42-30E	I	1		Complete
GREISK 2		53-17-00N 27-40-45E	I	1		Complete
URLOVYI		53-11-00N 27-58-30E	II	1		Complete
GROZNYI Launch Complex						
SIKHEIN-KOYE		43-08-15N 44-54-15E	I	1		Complete
NESTEROVSKAYA		43-11-30N 44-57-00E	I	1		Complete
ACHKHUY MARTAN		43-10-30N 45-19-30E	IV	1		Complete
GUSEV Launch Complex						
GUSEV 1		54-11-30N 22-05-00E	I	1		Complete
GUSEV 2		54-11-00N 22-03-30E	I	1		Complete
GVARDEYSK Launch Complex						
GVARDEYSK 1		54-10-30N 21-07-30E	I	1		Complete
GVARDEYSK 2		54-15-15N 21-09-15E	I	1		Complete
JELGAVA Launch Complex						
IECAVA 1		56-35-30N 24-04-00E	II	1		Complete
IECAVA 2		56-39-15N 24-07-30E	II	1		Complete
IECAVA 3		56-33-00N 24-20-30E	IV	1		Complete

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TABLE 5. (Continued)

LOCATION	BE NUMBER	COORDINATES	TYPE	NO OF PADS LAUNCHERS	DATE OF LATEST PHOTOGRAPHY	ESTIMATED CONSTR STATUS
JONAVA Launch Complex		51-57-15N 21-05-15E	II	1		Complete
KARMELEVA		55-01-00N 24-11-15E	II	1		Complete
JONAVA						
KAMENETS-PODOLSKIY Launch Complex		18-51-15N 26-12-30E	II	1		Complete
KAMENETS-PODOLSKIY		18-55-15N 26-59-00E	II	1		Complete
DUNAYEVTSY						
KIVERTSY Launch Complex		50-53-15N 25-31-00E	I	1		Complete
KIVERTSY 1		50-54-00N 25-36-15E	I	1		Complete
KIVERTSY 2		50-58-30N 25-39-30E	II	1		Complete
TROSTYANETS						
KONKOVICH Launch Complex		52-10-30N 28-41-15E	I	1		Complete
PETRIKOV		52-15-30N 28-47-15E	I	1		Complete
KONKOVICH						
KOROSTEN Launch Complex		50-51-15N 28-18-15E	II	1		Complete
KOROSTEN 1		50-52-15N 28-31-00E	II	1		Complete
KOROSTEN 2						
KOZHANOVICH Launch Complex		52-10-15N 27-51-30E	I	1		Complete
KOZHANOVICH 1		52-11-30N 27-48-00E	I	1		Complete
KOZHANOVICH 2						
KRASKINO Launch Complex		12-11-00N 130-10-15E	II	1		Complete
KRASKINO						
KRASNOYARSK Launch Complex		55-01-20N 22-23-00E	I	1		Complete
VIESVILLE		55-01-15N 22-11-15E	I	1		Complete
RAGNIT						
KREMOVO Launch Complex		11-01-21N 132-20-30E	I	1		Complete
KREMOVO		11-02-50N 132-26-26E	I	1		Complete
LYALIE						
KURGANCH Launch Complex		59-37-15N 65-57-30E	I	1		Complete
KURGANCH 1		59-37-30N 65-57-40E	I	1		Complete
KURGANCH 2		59-23-15N 65-42-15E	IV	1		Complete
TYM						
LIDA Launch Complex		53-17-30N 25-20-30E	I	1		Complete
LIDA 1		53-57-15N 25-27-15E	I	1		Complete
LIDA 2						

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TABLE 6. (Continued)

LOCATION	BE NUMBER	COORDINATES	TYPE	NO OF PADS LAUNCHERS	DATE OF LATEST PHOTOGRAPHY	ESTIMATED CONSTR STATUS
LUTSK Launch Complex						
LUTSK 1		50-16-45N 25-03-00E	I	1		Complete
LUTSK 2		50-50-30N 25-04-15E	I	1		Complete
VLADIMIR-VOLYNSKIY		50-18-30N 21-12-30E	IV	1		Complete
MARINA GORKA Launch Complex						
MARINA GORKA		53-26-30N 27-45-30E	II	1		Complete
MAYKOP Launch Complex						
KURDZHIPSKAYA		44-31-45N 40-00-45E	II	1		Complete
SHIRVANSKAYA		44-25-30N 39-51-00E	IV	1		Complete
MOLOSKOVITSY Launch Complex						
MOLOSKOVITSY 1		50-28-45N 29-06-00E	II	1		Complete
MOLOSKOVITSY 2		50-29-30N 29-12-15E	II	1		Complete
GURLEVO		50-25-00N 29-53-15E	IV	1		Complete
MUKACHEVO Launch Complex						
MUKACHEVO 1		48-18-45N 22-30-45E	I	1		Complete
MUKACHEVO 2		48-19-30N 22-37-15E	I	1		Complete
NADVOIRNAYA Launch Complex						
PARYSICHE		48-37-45N 24-12-00E	I	1		Complete
NOVAYES		48-39-30N 21-18-15E	I	1		Complete
OTYSSA		48-47-30N 21-50-30E	IV	1		Complete
OSTROG Launch Complex						
OSTROG 1		50-11-00N 26-43-15E	I	1		Complete
OSTROG 2		50-17-15N 26-11-00E	I	1		Complete
OSTROY Launch Complex						
ASANOVSCHINA		57-31-45N 28-12-45E	I	1		Complete
SHEVELEVO		57-37-00N 28-12-45E	I	1		Complete
REDKINO		57-24-30N 28-26-00E	IV	1		Complete
PAPLAKA Launch Complex						
PAPLAKA 1		56-24-00N 21-17-30E	I	1		Complete
PAPLAKA 2		56-25-00N 21-16-45E	I	1		Complete
PINSK Launch Complex						
IVANOVO		52-10-45N 25-11-15E	I	1		Complete
MOTOL		52-12-30N 25-11-30E	I	1		Complete

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TABLE 5. (Continued)

LOCATION	BE NUMBER	COORDINATES	TYPE	NO. OF PADS LAUNCHERS	DATE OF LATEST PHOTOGRAPHY	ESTIMATED CONSTR STATUS
POLOTSK Launch Complex		55-24-30N 28-44-30E	II	I		Complete
POLOTSK 1		55-24-15N 28-33-45E	II	I		Complete
POLOTSK 2						
POSTAVY Launch Complex		55-09-45N 26-53-45E	II	I		Complete
POSTAVY 1		55-20-30N 26-51-30E	II	I		Complete
ROZHANY						
POSTAVY 2		55-06-45N 27-00-15E	IV	I		Complete
PRUZHANY Launch Complex		52-30-30N 24-08-45E	II	I		Complete
PRUZHANY 1		52-33-30N 24-06-15E	II	I		Complete
PRUZHANY 2						
RAKVERE Launch Complex		59-08-45N 26-26-45E	II	I		Complete
SIMUNA		59-11-15N 26-20-45E	II	I		Complete
VAIKE MAARJA						
RISTI Launch Complex		59-04-00N 24-04-30E	I	I		Complete
RISTI 1		59-07-45N 24-06-45E	I	I		Complete
RISTI 2						
RUZHANY Launch Complex		52-47-45N 24-42-30E	II	I		Complete
KRUPA 1		52-49-15N 24-45-30E	II	I		Complete
KRUPA 2						
SATEIRI Launch Complex		55-59-45N 21-38-15E	I	I		Complete
SAMANTAI 1		56-02-45N 21-41-30E	I	I		Complete
SAMANTAI 2		56-01-45N 21-54-30E	IV	I		Complete
ZEMAITU KALABRIJA						
SMEROPOL Launch Complex		44-53-45N 34-20-00E	I	I		Complete
NAZANKA		44-57-00N 34-26-00E	I	I		Complete
VILKI						
SLONIM Launch Complex		52-52-30N 25-21-30E	I	I		Complete
BYTEN 1		52-55-45N 25-22-15E	I	I		Complete
BYTEN 2						
SOKAL Launch Complex		50-22-45N 24-18-15E	I	I		Complete
SOKAL 1		50-27-45N 24-20-00E	I	I		Complete
SOKAL 2		50-20-15N 24-26-15E	IV	I		Complete
SOKAL 3						

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TABLE 6. (Continued)

LOCATION	BE NUMBER	COORDINATES	TYPE	NO OF PADS LAUNCHERS	DATE OF LATEST PHOTOGRAPHY	ESTIMATED CONSTR STATUS
SOVETSK Launch Complex SLASK 1 SLASK 2		51-59-15N 21-36-30E 51-59-15N 21-28-30E	I I	1 1		Complete Complete
SUCHAN Launch Complex NOVITSKOYE SEVERNYA SUCHAN		43-01-15N 133-17-00E 43-10-00N 133-20-05E	I I	1 1		Complete Complete
TAURAGE Launch Complex TAURAGE 1 TAURAGE 3		55-10-15N 22-20-30E 55-05-00N 22-20-00E	I I	1 1		Complete Complete
TORVA Launch Complex TORVA 1 TORVA 2 TSIRGU LINA		57-56-00N 26-01-00E 57-59-15N 26-05-00E 57-49-15N 26-12-30E	I I IV	1 1 1		Complete Complete Complete
UGOLNY Launch Complex UGOLNY		61-47-32N 177-56-15E	II	1		Complete
UKMERGE Launch Complex VEPRIM UKMERGE		55-07-15N 21-38-30E 55-11-00N 21-42-30E	I I	1 1		Complete Complete
UMAN Launch Complex MOLODETSKOYE MANKOVA KISHINYI		48-23-15N 30-27-45E 48-27-15N 30-23-15E 49-00-15N 30-13-45E	I I IV	1 1 1		Complete Complete Complete
USOG Launch Complex OVRICH 1 OVRICH 2 EPNIRI		51-17-15N 28-16-15E 51-18-30N 28-10-30E 51-12-15N 28-26-30E	I I II	1 1 1		Complete Complete Complete
UZHGOROD Launch Complex UZHGOROD		48-33-30N 22-13-15E	II	1		Complete
VOIR Launch Complex VOIR 1 VOIR 2		57-16-00N 26-47-15E 57-19-00N 26-50-30E	II II	1 1		Complete Complete
VSELYUB Launch Complex VSELYUB 1 VSELYUB 2		53-15-15N 25-43-00E 53-18-00N 25-16-45E	I I	1 1		Complete Complete

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TABLE 6. (Continued)

LOCATION*	BE NUMBER	COORDINATES	TYPE	NO OF PADS LAUNCHERS	DATE OF LATEST PHOTOGRAPHY	ESTIMATED CONSTR STATUS
YELSK Launch Complex						
YELSK 1		51-12-30N 29-12-30E	I	1		Complete
YELSK 2		51-17-15N 29-18-15E	I	1		Complete
ZAGARE Launch Complex						
ZAGARE 1		26-23-15N 23-19-15E	I	1		Complete
ZAGARE 2		26-29-00N 23-20-15E	I	1		Complete
LELELELA		26-21-30N 23-36-15E	IV	1		Complete
ZHITOMIR Launch Complex						
ZHITOMIR 1		50-01-45N 28-15-15E	II	1		Complete
ZHITOMIR 2		50-10-00N 28-16-15E	II	1		Complete
BERDICHEV		50-05-30N 28-22-00E	II	1		Complete
ZHMERINKA Launch Complex						
GNIVAN		49-09-00N 28-11-15E	II	1		Complete
ZHMERINKA		49-10-15N 28-05-00E	II	1		Complete
VINNITSA		49-17-30N 28-20-15E	IV	1		Complete
ZNAMENSK Launch Complex						
ZNAMENSK 1		51-32-45N 21-11-15E	I	1		Complete
ZNAMENSK 2		51-35-15N 21-07-30E	I	1		Complete

*TBI site designators have been adopted for MRBM launch sites.

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Table 6. Summary Evaluation of Selected Launch Facilities, Rapaunui Air Missile Test Center

Table 3. Summary of Status of Active Launch Facilities Reported as Susceptible to Nuclear Damage																
Complex Area Site	III Number	Coordinates	Type of Site	Number of Positions		Site Segregated		First Coverage		Latest Coverage		Stage of Construction on Last Usable Coverage			Estimated Status	
				Soft	Hard	Date	Mon	Date	Mon	Date	Mon	Date	Mon			
														Const		
Complex A																
Launch Site 1A1		48-42N 46-15E	R&D	1	..									Complete	Operational	
Launch Site 1A2			R&D 1 Eng	1	..									Complete	Operational	
Launch Site 2A1			R&D 3	..	1									Complete	Operational	
Launch Site 2A2			R&D	..	1									Inactive	Inactive	
Complex C																
Launch Site 1C1		48-36N 46-17E	Space R&D	1	..									Complete	Operational	
Launch Site 1C2			Under	1	..									Complete	Operational	
Launch Site 1C3			Under	1	..									Complete	Operational	
Launch Area 3C		48-35N 46-17E	R&D 1 Eng	2	..									Complete	Operational	
Launch Area 3C		48-34N 46-17E	R&D 1 Eng	1	..									Complete	Operational	
Launch Site 4C1		48-34N 46-17E	Type IV	..	4									Complete, being modified	Undetermined	
Launch Site 4C2		48-33N 46-17E	Type IV	..	3									Complete, being modified	Operational	
Launch Site 5C1		48-32N 46-17E	Under	2	..									Complete, 1 pad being modified	Undetermined	
Launch Site 5C2		48-32N 46-17E	Under	2	..									Never completed	Abandoned	
Complex I		48-46N 46-18E	Under	1	..									Complete	Operational	
Complex G		48-24N 46-17E	1 Eng	2	..									Complete	Operational	
Complex H		48-48N 46-20E	Under	2	..									Mtd	U/C	

*R&D 1 Eng site on first coverage Prototype.

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TABLE 7. SUMMARY EVALUATION OF SOVIET FIXED FIELD SITES (SSM FIXED FIELD POSITIONS)

LOCATION	BE NUMBER	COORDINATES	NEGATION DATE	FIRST OBSERVED	NO OF LAUNCH POSITIONS
AKHTYRKA Akhtyrka		50-19-30N 34-51-30E			4
ALUKSNE Lejasciems		57-13-15N 26-41-15E			4
ANASTASYEVA Anastasyevka		48-32-15N 135-31-45E			1
BELOKOROVICH Rudnya Zlotinskaya		51-08-30N 27-59-45E			4
BORSCHEV Skalapodolskaya 1 Skalapodolskaya 2		48-53-30N 026-13-30E 48-52-30N 026-16-00E			4 4
BREST Pishcha Zamshany		51-53-15N 23-46-45E 51-50-05N 24-02-05E			4 4
BRODY Yazlovchik Stani-slavchik		50-05-45N 25-02-00E 50-07-00N 24-56-30E			1 1
DERAZHNYA Khmelnit-skiy Letichev 1 Letichev 2		49-25-00N 27-06-30E 49-22-45N 27-43-45E 49-25-15N 27-45-00E			2 4 2
DISNA Dernovichi		55-47-45N 28-20-00E			4
DOLINA Berezhnitsa Rukuy		49-12-45N 23-57-30E 48-58-21N 24-05-35E			4 4
DYATLOVO Ruda Yavor-skaya 1 Ruda Yavor-skaya 2 Ruda Yavor-skaya 3		53-23-15N 25-16-30E 53-23-15N 25-12-45E 53-23-15N 25-13-30E			4 5 4
GOMEL Gomel		52-20-45N 30-51-30E			4
GUSEV Tolminkomsk		54-22-15N 22-20-15E			4

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TABLE 7. (Continued)

LOCATION*	BE NUMBER	COORDINATES	NEGATION DATE	FIRST OBSERVED*	NO OF LAUNCH POSITIONS
GVARDEYSK Goroysskoye Vysokoye		54-45-45N 21-25-15E 54-44-30N 21-33-45E			2 4
JELGAVA Jelgava 1 Jelgava 2		56-38-45N 23-52-45E 56-44-15N 23-55-15E			2 1
JONAVA Kaišiadorys		54-59-30N 24-29-00E			4
KAMENETS-PODOLSKIY Yarmolint-sy Vinkovtsy		49-12-00N 26-16-15E 48-58-20N 27-12-05E			4 1
KIVERTSY Kivertsy		50-50-00N 25-25-00E			4
KONKOVICHI Novoselki 1 Novoselki 2		52-23-00N 28-42-45E 52-25-16N 28-11-00E			1 1
KOROSTEN Liki 1 Yemilichino 1 Yemilichino 2 Liki 2		51-01-30N 28-27-15E 50-52-30N 27-53-00E 50-52-00N 27-53-00E 51-01-15N 28-24-15E			1 1 1 2
KRASNOZNAMENSK Krasnoznamensk Sudzhits		54-57-30N 22-35-00E 55-00-30N 22-35-00E			4 4
KREMOVO Manzovka		44-12-00N 132-34-00E			4
LIDA Vasilchiki		53-44-00N 21-56-15E			1
LITSK Gorokhov		50-35-45N 24-48-45E			1
MARINA GORKA Shotsk		50-27-45N 27-48-00E			1
MAYKOP Tul'skaya Maykop		49-31-15N 40-14-45E 44-39-50N 39-57-45E			1 1

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TABLE 7. (Continued)

LOCATION*	BE NUMBER	COORDINATES	NEGATION DATE	FIRST OBSERVED	NO OF LAUNCH POSITIONS
NADVORNAYA Lygkovtsy		48-38-00N 24-54-15E			1
OSTROG Shosha		50-16-15N 26-57-16E			2
Shopotavki		50-12-30N 26-53-00E			1
OSTROV Shabany		57-23-45N 28-13-15E			1
PINSK Lyckovtsy		52-15-00N 25-21-15E			1
POLOTSK Plissa 1		55-12-30N 28-01-15E			3
Plissa 2		55-11-30N 27-54-15E			1
POSTAVY Svitsy		55-09-30N 26-53-15E			1
Bogotoye		54-57-15N 26-28-15E			1
Kohlynik		54-56-30N 26-37-15E			1
PRUZHANY Strigova		53-23-15N 24-11-30E			1
Shcherby		52-23-00N 24-10-00E			1
RUZHANY Shehitno 1		52-43-15N 24-58-15E			1
Shehitno 2		52-41-00N 24-57-30E			1
SATEIKI Tol'shai		55-56-15N 22-07-00E			1
Al'sodzhal		56-00-15N 22-06-00E			1
SLONIM Byton		52-54-30N 25-22-00E			2
SMORGON Smorgon		54-34-45N 26-21-30E			2
TAURAGE Skavdyle		55-23-00N 22-31-00E			4
Taurage		55-10-00N 22-14-30E			2

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TABLE 7 (Continued)

LOCATION*	BE NUMBER	COORDINATES	NEGATION DATE	FIRST OBSERVED	NO OF LAUNCH POSITIONS
TORVA Valga		57-50-15N 25-54-15E			1
CKMERGE Golvonai Balminkai		55-07-15N 24-43-45E 55-13-00N 25-02-00E			1 1
USOVO Luginy		51-06-00N 26-23-00E			1
YELSK Yelsk		51-50-45N 29-05-15E			1
ZAGARE Dobele 1 Dobele 2		56-40-00N 23-11-45E 56-40-45N 23-06-45E			1 1
ZHITOMIR Berdichev		49-51-30N 26-25-30E			2
ZHMERINKA Vinnitsa Bar		49-13-15N 26-48-45E 49-05-30N 27-43-00E			1 1
ZNAMENSK Pravdinsk Domnovo		54-23-00N 20-59-45E 54-25-30N 20-53-00E			3 1
TOTAL					273

*TDI site designators have been adopted for the fixed field sites, which are listed under the nearest permanent IRBM/IRBM complex.

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Table 9. Summary Characteristics of Soviet SSBM/IRBM/MBRM Systems Without Support Facilities

Designation	SL Number	Coordinates	Type	Use Segment			First Test/Combat Status	Status	Last Test		First Observed		Remarks
				Date	Time	Class			Date	Time	Date	Time	
Bygones-AB	37-40-000	62-12-000	II					Complete					
Bygones-AB	38-25-000	60-10-150	II					Early					
Bygones-AB	32-41-000	50-30-000	II					Under-					
Bygones-AB	33-25-150	62-22-000	II					Complete					
Bygones-AB	42-40-000	120-40-150	II					Complete					
Bygones-AB	33-30-000	27-45-000	II					UVC, under-					
Bygones-AB	45-47-150	133-43-000	II					Complete					
Bygones-AB	48-15-000	22-15-150	II					Complete					
Bygones-AB	50-30-000	70-30-000	II					Complete					

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Table 10. Soviet KCBM, IRBM, and MBRM Systems, Estimated Technical Characteristics and Performance

	SS-4	SS-5	SS-6	SS-7	SS-8	SS-9	SS-10 1/2
Initial operational capability (IOC)	Late 1958	Late 1961	1960	Early 1962 (soft) Early 1963 (hard)	Mid-1963 (soft) Mid-1964 (hard)	1965	Undetermined
Maximum range (km)	1,200	2,200	6,000	6,000	6,000	6,000	6,000
Guidance	Inertial	Inertial	Radio inertial	Inertial	Radio inertial	Radio inertial 3/	Radio inertial
Circular error probability (CEP) initial	1.25 km	0.8 km	2.0 km	1-2 km 1.0/1966	1.0 km 0.8/1967	0.5-1.0 km 0.5/1968-1970	Undetermined
Improvement/year	1,300 ± 500	2,300-4,000	6,000 ± 1,000	3,000-4,000 5/	2,500-4,000	10,000 ± 1,000	Undetermined
Re-entry vehicle weight (lb)	2,000 ± 500	2,000-3,200	6,000 ± 1,000	2,400-3,200	2,000-3,200	6,000 ± 1,000	Undetermined
Cross lift-off weight (lb)	86,000 (approx)	200,000 (approx)	500,000 (approx)	300,000 (approx)	165,000 (approx)	400,000 (approx)	Undetermined
Configuration	Single-stage	Single-stage	Parallel	Tandem 2-stage	Tandem 2-stage	Tandem 2-stage	Tandem 2-stage
Propellant	Storable liquid	Storable liquid	Non-storable liquid	Storable liquid	Non-storable liquid	Storable liquid	Liquid
Reliability (mean time between failures)	80%	80%	80%	80%	80%	80%	Undetermined
Initial improvement/year	80%	85%	85%	85%	85%	85%	Undetermined
Initial improvement/year	85%	80%	85%	90%	90%	85%	Undetermined
Overall improvement/year	85% (soft) 85% (hard)	85% (soft) 85% (hard)	85%	85%	85%	85%	Undetermined

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TABLE 9. COMPOSITION OF IRBM/MRBM COMPLEXES

No of Complexes	Containing Soft Sites Only				Containing Hard Sites Only			Containing Hard and Soft Sites		
	One Site, No Housing or Support Facility	One Site	Two Sites	Three Sites	One Site	Two Sites	Three Sites	Two Soft, One Hard Site	One Soft, One Hard Site	One Soft, Two Hard Sites
IRBM	3			2				1	1	3
35					1		3			
MRBM	3	3	1	36	6					
43								20	1	
21								21	2	31
TOTALS	81	6	1	36	8	1	0	3		

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Table 10. (Continued)

	SS-4	SS-5	SS-6	SS-7	SS-8	SS-9	SS-10 A
Reaction time from ready condition: 6/	1-3 hrs	1-3 hrs	12 hrs (minimum)	1-3 hrs	1-3 hrs	1-3 hrs	Undetermined
Condition 3	15-30 min	15-30 min	1-2 hrs	15-30 min	30-45 min	15-30 min	Undetermined
Condition 2	5-15 min	5-15 min	5-15 min	5-15 min	5-15 min	5-15 min	Undetermined
Condition 1	hrs-days	hrs-days	1 hr	hrs (soft) - days (hard)	1 hr (approx)	hrs (soft) - days (hard)	Undetermined
Hold time in ready condition 1, 2/							
Refire time 8/	2-4 hrs	2-4 hrs	12 hrs (minimum)	2-4 hrs	2-4 hrs	2-4 hrs	Undetermined

- 1/ The evidence is insufficient to enable us to make a complete estimate of SS-10 characteristics and performance.
- 2/ Operational range is dependent on weight class of payload used.
- 3/ It is believed that the SS-6 has an additional all-inertial guidance capability with a CEP of 14.15 nm.
- 4/ More than one re-entry vehicle exists within these limits. Another, weighing as much as approx. 5,000 lbs (payload 4,000 lbs) has been stated to a reduced range (4,700 nm).
- 5/ These reliability rates may be too high since they may not sufficiently take into account the effect of current operational methods and troop training, which are at least as important as technical characteristics in determining system reliability. We have little basis for estimating these effects.
- 6/ Readiness Condition 3 is believed to be the normal readiness condition for missiles deployed at soft sites, and Condition 2 for hard sites.
- 7/ An unfavorable environment could seriously degrade these hold times. Because of the protection afforded a missile in a hardened site, it is given a longer hold time than its soft counterpart. We believe the cryogenic properties of non-storable propellants probably limit these missiles to a hold time of about 1 hour.
- 8/ Refire capabilities are applicable to soft sites only. Estimated refire times are based on the assumption that the launch sites were designed specifically for an efficient refire capability and that no major refurbishment of ground support equipment or launch stand is necessary.

TOP SECRET

TOP SECRET