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April 1964

EVALUATIONS OF SOVIET SURFACE-TO-SURFACE MISSILE DEPLOYMENT 12TH REVISION

A Report of the Deployment Working Group of the

Guided Missiles and Astronautics Intelligence Committee

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The Guided Missiles and Astronautics Intelligence Committee (GMAIC) wishes to express its appreciation to the National Photographic Interpretation Center for its assistance in the editing, illustration, and publication of this report.

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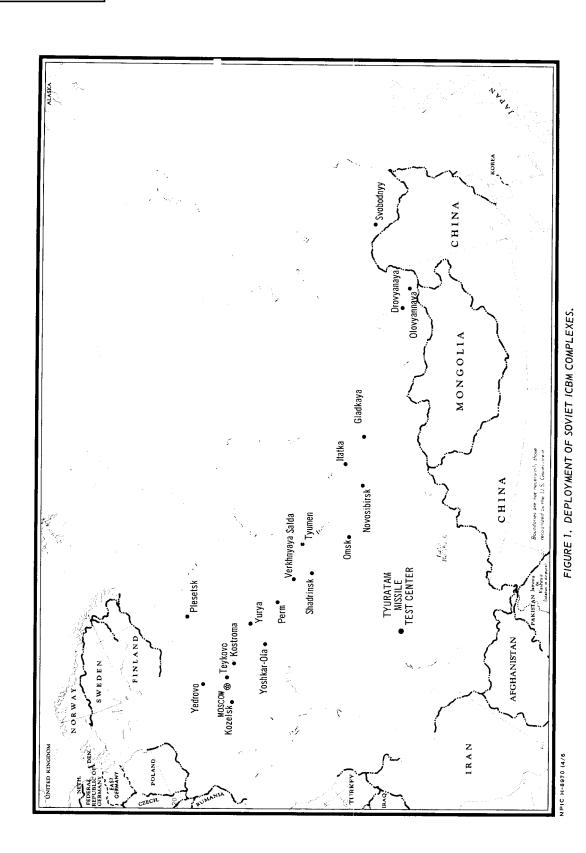
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PREFACE

This report, published bimonthly by the GMAIC Deployment Working Group (DWG), provides a comprehensive, ready-reference listing of all ICBM, IRBM, and MRBM deployment locations, types of site configurations, photographic references, estimated construction and operational status, and other evaluations by the DWG. These data constitute the majority view of the DWG membership, and may not correspond precisely to individual assessments by each member. Additional data may be added to future revisions.

Dissemination of the report was previously limited to holders of the DWG report, <u>Soviet Surface-to-Surface Missile Deployment</u>. Because the information contained herein is both supplemental and self-sustaining, distribution will no longer be limited to holders of the above report.



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_	INTROD	JCTION
25X1 25X1 25X1 25X1 25X1	This report is the twelfth revision of Evaluations of Soviet Surface-to-Surface Missile Deployment prepared by the Deployment Working Group of the Guided Missiles and Astronautics Intelligence Committee. The eleventh revision, dated and disseminated under control number can be destroyed in accordance with existing instructions for handling materials.	See Figure 1 for locations of de- 25X1 ployed ICBM complexes. Evaluation of
25X1	analysis of previous missions and other sources have provided additional information on the Soviet ballistic missile deployment program. The new data are reflected in Table 1 and in the estimated operational status shown in Tables 2 and 3. Cutoff date for information contained in this report is	Novosibirsk Complex provided the first good photographic coverage of the Novosibirsk Complex in 14 months (since and revealed a newly completed Type IID soft site, Launch Site E(5). Other new construction at this complex was negated by this mission The identification of this 25X1
25X1	Only one new site, a completed Type IID, was detected on the two	has escaped detection while under construction. Since all complexes have been covered by ade-
25X1 25X1	On the other hand,confirmed that one Type IIC site has been inactive since the and has probably been abandoned. Therefore, the total number of con-	quate photography since it is un- likely that additional undetected completed sites exist at identified complexes.
	firmed and probable deployed sites remains at 105 (238 launchers). Additionally, one site is carried in the possible category. Of the 238 launchers, about 185 are considered to be operational. We are now carrying a total of five complexes (Itatka, Plesetsk, Verkhnyaya Salda, Vedrovo, Yoshkar-Ola) with all sites estimated	Good quality coverage of the Tyumen Complex on confirmed that Launch Site B(1) has been inactive since the and has probably been abandoned. We are therefore dropping this site from our tables.

Omsk Complex

In the 11th revision we estimated that Omsk Launch Site A(1), a Type IIIB, was probably com-

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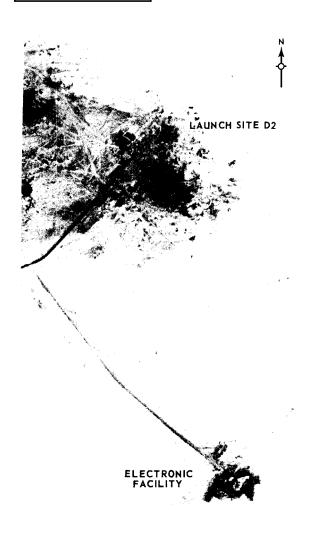
as operational. In addition, all 18 complexes now are estimated to have some operational

launchers. Of particular significance is the fact

that our current appraisal indicates that only one

or two more sites will attain operational status

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'			25X1
25X1	plete based on construction timing and the fact that backfilling had commenced when this site was last observed on Non-stereo photography on re-	Yedrovo Complex Yedrovo Site I(3) was covered on but poor quality photography precluded	25X1 25X1
25X1 25X1	vealed that the site was probably still in a very late stage of construction in We estimate that the site was completed during	a further assessment of the function of this installation (see 11th Revision).	
25X1	and continue to carry it in our tables as operational.	Soft Site Deployment Usable photographic coverage of 12 of the	
25X1	Launch Site B(3), currently carried as a possible site, appeared inactive on although an excavation is still apparent.	18 ICBM complexes since veals that no new soft site construction has been initiated at these complexes since	25X1 25X1
25X1 25X1 25X1	Initial activity in this area was noted on Occasional activity has been noted on subsequent missions, but no construction progress has been observed. We will continue to carry this site as possible pending confirmation that construction activity has, in fact,	All but two soft sites are now carried as operational. This evidence indicates that construction of new soft sites, at least in known configurations, has stopped. However, future coverage of the remaining six complexes will be required to confirm this judgment.	25X1
25X1	Olovyannaya Complex revealed that Launch Site A(1) at Olovyannaya is complete. Since we estimate that Launch Site A(1) at Omsk is also complete, all 18 complexes are now estimated to have some operational launchers.	Tyuratam Missile Test Center provided clear, good-quality photography of the rangehead at Tyuratam. Significant changes include the construction of an electronic facility at Launch Site D-2(9), completion of Launch Site G-1(7), and probable completion of Launch Complex H(8).	25X1
	Kozelsk Complex	At Launch Site D-2(9), construction appears to be in the final stages (Figure 3). In addition, an electronic facility similar to that at Complex	
25X1	Good coverage of Launch Site C(1) at Kozelsk on reveals that this Type IIIB site may be inactive. This site was first iden-	H(8) in both configuration and orientation is under construction immediately to the south. It is interesting to note that Flim Flam backtrack-	25X
25X1		ing of the modified SS-7 missiles fired on indicates the general vicinity of Launch Complex D as the	25X 25X1
25X1	with a hard configuration. Only an excavation was apparent at that timendicates that construction may not have progressed during the period between themissions. Pending further coverage, we are continuing to carry this site as being under construction.	Both launch pads and associated facilities at Launch Site G-1(7) appear to be complete (Figure 4). There is currently no evidence to indicate the function for which this complex has been designed and constructed.	
	_ :	3 -	



25X1

FIGURE 3. LAUNCH SITE D-2, TYURATAM.

Launch Complex H(8), apparently a semi-hardened launch facility, is probably complete (Figure 5). Flim Flam backtracking to this general area suggests that the modified SS-7 missile fired on ______ may have been launched from this facility. Proximity of this launch area to Launch Complex C(3), however, precludes an accurate determination of the launch area involved.

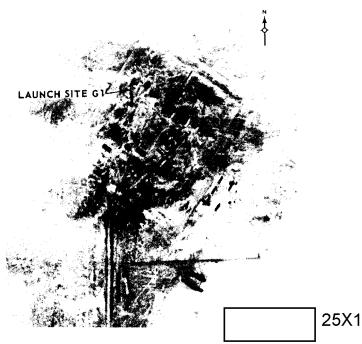


FIGURE 4. LAUNCH SITE G-1, TYURATAM.

Test Range Activity

Since our last report, ten ICBMs have been launched from Tyuratam. These include three SS-7s, one modified SS-7, five SS-8s, and one as yet uncategorized.

a triple launch of SS-8 missiles was attempted within a 31-minute period. The first impacted in the mid-Pacific, the second apparently was either canceled or suffered an early inflight failure 10 minutes after the first, and the third impacted on Kamchatka. This was the first attempt by the Soviets to launch three ICBMs in a short period of time since when 2 of 3 attempted SS-7s were successfully launched in a 10minute time period to the mid-Pacific impact area. It is interesting to note that in both triple launch attempts, the second missile either was canceled just prior to launch, or had an early inflight failure.

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FIGURE 5. LAUNCH COMPLEX H, TYURATAM.

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25X1

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An SS-8 fired to Kamchatka on apparently can be backtracked to Launch Complex F, the first evidence that this complex is operational.

SOVIET MRBM/IRBM DEPLOYMENT

majority of all deployed MRBM and IRBM complexes and no new sites were identified; however, two sites previously carried as pos-

sible were confirmed. These are Sledyuki, a soft MRBM site, and Novosysoyevka 3, a hard IRBM launch site. See Figure 6 for locations of deployed MRBM/IRBM complexes. Typical configurations of the launch sites are shown in Figure 7.

The site at Sledyuki is one of the category which has no associated housing or support facilities. The other sites in this category are Bayram-Ali, Belomorsk, Kraskino, Marina Gorka, Rozhdestvenka, Uzhgorod and Zhuravka. We still are unable to determine their operational status or their place in the deployment pattern. However, these sites are carried as complete in Tables 1 and 3.

Camouflage/Deception

We are continuing our appraisal of Soviet attempts at camouflaging MRBM/IRBM sites and will report our conclusions in our next revision.

Construction Stoppage or Slowdown

An apparent stoppage or slowdown in construction has come to light at 2 hard MRBM and 8 hard IRBM sites. Based on construction timing experience at similar sites, these 10 are considerably behind schedule and appear to be making very slow progress toward completion. We are unable to account for the slow pace at which construction is proceeding. Following is a chart of activity at these sites:

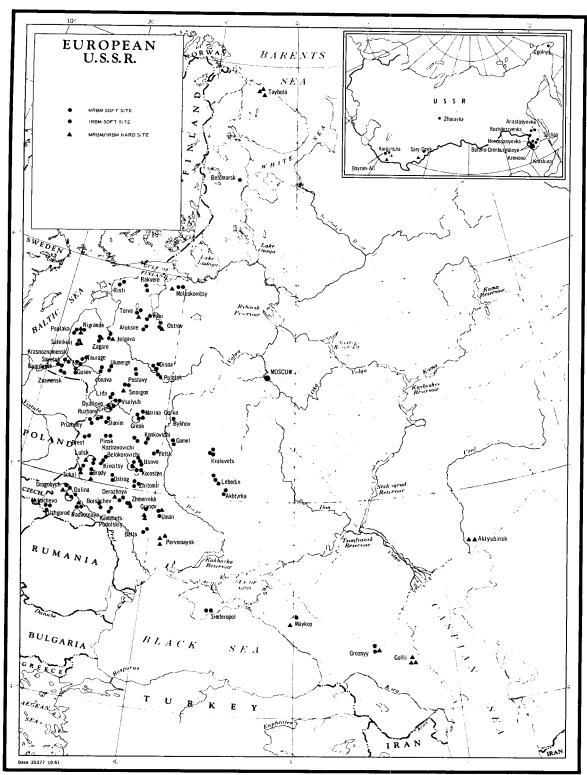


FIGURE 6. DEPLOYMENT OF SOVIET MRBM/IRBM COMPLEXES.

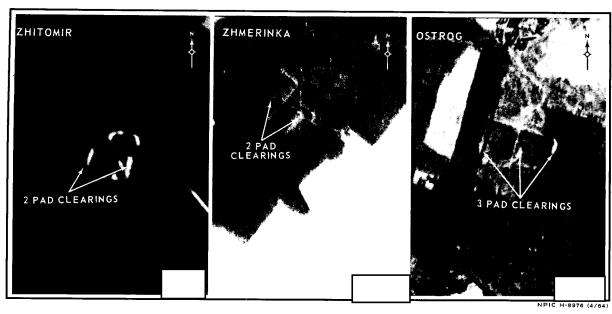


FIGURE 8. FIXED FIELD-TYPE SITES NEAR ZHITOMIR, ZHMERINKA, AND OSTROG.

Fixed Field-Type Sites

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Continuing evaluation of

has revealed two additional fixed field-type sites, one each at Berdichev (Zhitomir MRBM Complex) and Vinnitsa (Zhmerinka MRBM Complex). An additional site of this category was identified near the Ostrog MRBM Complex at Slavuta on ______ (Figure 8). These sites, which raise the total of fixed field-type sites to 12, are all located (except one) in the vicinity of permanent MRBM sites. The other sites of this kind are found at:

Anastasyevka (Anastasyevka Complex) Gelvonai (Ukmerge Complex) Jelgava (Jelgava Complex) Khmelnitskiy (Derazhnya Complex) Sivtsy (Postavy Complex) Smorgon (Smorgon Complex)
Tulskaya (Maykop Complex)
Vainode (probably abandoned) (Nigrande Complex)

Yarmolintsy (None)

Nine of the sites are near MRBM sites, two are near IRBM sites, and one occupies an isolated location which cannot be associated with any nearby MRBM or IRBM site.

Of the three new sites, Berdichev was pres-

Continuing scan of as resulted
in the identification of 3 additional pad clearings
at the Gelvonai fixed field-type site, making a
total of 4 pad clearings at this facility.

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

				O O M I	DEALD			,	
Туре	Sites	Launchers	Operational	U/C	Туре	Sites	Launchers	Operational	U/C
		ICBM					MRBM/IRBM	Л	
I IIA IIB IIC IID IIIA IIIB	3 5 29 7 31 26 4	4 10 58 14 62 78 12	4 10 58 14 58 39	0 0 0 0 4 39 9	II `	84 53 15 RBM) 21 RBM) 20	336 212 60 63 60	336 212 60 57 36	0 0 0 6 24
TOTAL	105	238	186	52	TOTAL	193	731	701	30

^{*}See Tables 2 and 3 for details. Figures include a third launch silo at Type III ICBM, and Type IV IRBM and MRBM sites.

			· · · · · · · · · · · · · · · · · · ·	TABI	LE 2. SUMMA	RY EVALUATION	ON OF SOVIET I	CBM DEPLOYMI	ENT					25X1
	Location *	BE Number	Coordinates	Type of Site	Number of Launchers	Site Negated	First Coverage	Latest Coverage	Stage of Const on Last Usable Coverage		ited Qui		Estimated Status	
25X1	DROVYANAYA Site A (1) Site B (2) Site C (3) Site D (4) Site E (5) Site F (6)	1	51-24N 113-00E 51-23N 113-07E 51-20N 113-01E 51-28N 113-04E 51-28N 113-04E 51-29N 112-50E 51-19N 112-53E	IIB IIIA IID IID IIIA IIIA	2 3 2 2 3 3 3	Date Msn	Date Msn	Date Msn	Date Msn Const	1st 2n 63 64 65 65	5	4th	Operational Operational Operational Operational U/C U/C	25X1 25X1
TOP SECTOR	GLADKAYA Site A (3) Site B (2) Site C (4) Site D (5) Site E (6) ITATKA Site A (1) Site B (2)		56-20N 92-20E 56-25N 92-25E 56-30N 91-58E 56-20N 92-13E 56-25N 92-12E	IID IID IIIA IIIA IIIA	2 2 3 3 3					65	65 65 62	63	Operational Operational U/C U/C U/C Operational	TOP SE
25281	Site B (2) Site C (3) KOSTROMA Site A (1) Site B (2) Site C (3) Site D (4) Site E (5) Site F (6) Site G (7) Site H (8) Probable KOZELSK		57-01N 85-39E 56-54N 85-39E 58-02N 41-01E 58-02N 41-07E 57-59N 41-09E 58-05N 41-40E 57-55N 41-100E 58-06N 41-34E 58-03N 41-33E	IIB IID IIB IIB IIB IIB IIIA IIID IIIA	2 2 2 2 2 2 2 2 2 2 2 2 3 2 2 3					63 62 62 33		63 63	Operational UPC	SECRET
	Site A (3) Site B (2) Site C (1) Site D (4) Site E (5) Site F (6) NOVOSIBIRSK Site A (2)		53-54N 35-44E 53-48N 35-41E 53-46N 35-41E 53-52N 35-51E 53-51N 35-41E 53-41N 35-39E 55-19N 83-10E	IIC IIIB IIC IIIB IIIB	2 2 3 2 3 3					33	63 65 64	63 63 64	Operational Operational U/C Operational U/C U/C U/C Operational	
	Site B (1) Site C (3) Site D (4) Site E (5) OLOVYANNAYA Site A (1)		55-19N 83-01E 55-23N 82-56E 55-21N 83-14E 55-20N 82-56E 50-54N 115-49E	IIIA IIIA IID IID	3 3 2 2					63	64	68	Operational U/C Operational Operational	
	Site B (2) Site C (3) OMSK Site A (1) Site B (3) Possible		50-55N 115-44E 51-01N 115-57E 55-09N 73-38E 55-11N 73-33E	IIIA IIIA IIIB Undet	3 3 3					64 65 84	65		Operational U/C U/C Operational Undetermined	ļ

Location*	BE	Coordinates	Type of	Number of Launchers	Site Negated	First Coverage	Latest Coverage		Const on Last le Coverage			d Quar		Estimated Status	
	Number	3,000	Site	Soft Hard	Date Msn	Date Msn	Date Msn	Date	Msn Const	1st	2nd	3rd	4th		
PERM Site A (1) Site B (2) Site C (3) Site D (5) Site E (6) Site F (4)		57-41N 56-18E 57-42N 55-57E 57-37N 56-07E 57-43N 55-49E 57-45N 56-00E 57-41N 56-04E	IIB IIB IIB IID IID	2 2 2 2 2 2						64 65	62	63	62 63	Operational Operational Operational Operational Operational U/C	
PLESETSK Site 1 (1) Site 2 (2) Site 3 (3) Site A (4) Site B (5) Site C (6) Site D (8)		62-55N 40-27E 62-56N 40-32E 62-57N 40-41E 62-58N 40-47E 63-03N 40-58E 63-01N 40-52E 62-59N 40-35E	I I IIA IIB IIIA IIC IIC	2 1 1 2 2 2						60 60 63	60 62	61 63 63		Operational Operational Operational Operational Operational Operational Operational	
Site E (7) SHADRINSK Site A (1) Site B (2) Site C (3)		62-50N 40-35E 56-09N 63-52E 56-10N 64-03E 56-07N 63-57E	IIIA IIIA IIIA	3 3 3						64 65		63		Operational Operational U/C	
SVOBODNYY Site A (3) Site B (1) Site C (2) Site D (4) Site E (6) Site F (5) Site G (7) Site H (8)		51-55N 128-10E 51-49N 128-19E 51-53N 128-23E 52-00N 128-06E 51-43N 128-00E 51-52N 128-13E 51-36N 127-58E 52-03N 128-03E	HB HB HB HD HD HD	2 2 2 2 2 2 2 2 2 3						64	65	62	62 62 63 63	Operational Operational Operational Operational Operational Operational U/C Operational	
TEYKOVO Site A (1) Site B (2) Site C (3) Site D (4) Site E (5) Site F (6) Site G (7)		56-55N 40-27E 56-56N 40-33E 56-55N 40-17E 56-58N 40-40E 56-48N 40-16E 56-54N 40-22E 56-46N 40-02E	IIB IIB IIB IID IID	2 2 2 2 2 2 2 2 2						63	62 62	64	63 63	Operational Operational Operational Operational Operational U/C U/C	
TYUMEN Site A (3) Site C (2) VERKHNYAYA SALD Site A (2) Site B (1) Site C (3)		56-52N 65-35E 56-51N 65-28E 58-09N 60-16E 58-06N 60-22E 58-10N 60-28E	IIC IIC IIB IIA IIA	2 2 2 2 2						62			63 63 61 61	Operational Operational Operational Operational Operational Operational	

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	,	<u></u>				TABLE 2	(Continued)							
Location*	BE Number	Coordinate	Type o		nber of inchers	Site Negated	First Coverage	Latest Coverage	Stage of Const on Last Usable Coverage	Est Sit	imate e Ope	d Qua	rter al	Estimated Status
				Soft	Hard	Date Msn	Date Msn	Date Msn	Date Msn Const	1st	2nd	3rd	4th	
YEDROVO Site A (2) Site B (1) Site C (5) Site D (4) Site E (8) Site F (6) Site G (7) Site H (9) Site I (3) Undetermined 1/		57-52N 33- 57-43N 33- 57-47N 33- 57-49N 33-	14E IIB	2 2 2 2 2 2	3					64 64 64	63	62 63 63	62	Operational Operational Operational Operational Operational Operational Operational Operational Undetermined
YOSHKAR-OLA Site A (1) Site B (2) Site C (3) Site D (4) Site E (5) Site F (6) YURYA		56-35N 48- 56-32N 48- 56-32N 48- 56-34N 48-	10E IIB 18E IIB 25E IIB 19E IID 14E IID 22E IID	2 2 2 2 2 2 2						63 64	62	62 63	63	Operational Operational Operational Operational Operational Operational
Site A (2) Site B (1) Site C (3) Site D (4) Site E (5) Site F (7) Site G (6) Site H (8) Site I (11) Site J (9) Site K (10)		59-08N 49- 59-12N 49- 59-15N 49- 59-22N 49- 59-21N 49- 59-04N 49- 59-11N 49- 59-06N 49-	33E IIA 41E IIA 28E IIB 24E IIB 17E IIIA 13E IIB 552E IIIA 46E IID 26E IID 45E IID	2 2 2 2 2 2 2 2	3 3					62 62 64 64 64 65	62		61 61 62 63	Operational U/C
TYURATAM Complex A1 (1) A2 Complex B (2) Complex C1 (3) C2 C3 Complex D1 (4) D2 (9) Complex E1 (6) E2 E3 Complex F (5) Complex G1 (7) G2 (11) Complex H (8) TOTALS		45-55N 63- 45-59N 63- 45-48N 63- 45-48N 63- 45-48N 63- 45-59N 63- 45-59N 63- 45-58N 63- 45-48N 63- 45-48N 63- 46-02N 63- 46-03N 62- 46-03N 62-	20E I 20E II Protot 39E II Protot 39E II 39E II A Prototy; 12E IIC 12E IIC 06E IIIB Protot 56E Undet 42E Undet	type 1 1 1 1 be be bype 1 1 1	3 3 3									Operational

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^{*}TDI site designators are indicated in parentheses.

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	TABI	LE 3. SUMMA	RY EVALUATION OF SO	VIET ME	RBM/IRBM DEPL	OYMENT	
	LOCATION*	BE NUMBER	COORDINATES	TYPE	NO OF PADS/ LAUNCHERS	DATE OF LATEST PHOTOGRAPHY	ESTIMATED CONSTR STATUS
25X1	AKHTYRKA Launch Complex Launch Site No 1 (AKHTYRKA 1) Launch Site No 2 (AKHTYRKA 2)		50-15-45N 34-50-15E 50-22-00N 34-57-15E	II II	4 4		Complete Complete
	AKTYUBINSK Launch Complex Launch Site No 1 (KARAKHOBDA 1) Launch Site No 2 (PETROVSKIY 1)		49-57-45N 56-51-15E 50-00-30N 56-58-15E	IV (II IV (II			Early Mid
T	ALUKSNE Launch Complex Launch Site No 1 (LEJASCIEMS) Launch Site No 2 (RUSKI) Launch Site No 3 (LEJASCIEMS 2)		57-21-15N 26-44-45E 57-25-15N 26-50-00E 57-13-00N 26-33-30E	II II IV(M	4 4 R) 3		Complete Complete Complete
OP S	ANASTASYEVKA Launch Complex Launch Site No 1 (ANASTASYEVKA 1) Launch Site No 2 (ANASTASYEVKA 2)		48-35-00N 135-38-45E 48-36-45N 135-41-30E	II II	4 4		Complete Complete
SEC 5X	BALTA Launch Complex Launch Site No 1 (BALTA 1) Launch Site No 2 (BALTA 2)		48-01-45N 29-33-30E 48-07-45N 29-34-30E	II II	4 4		Complete Complete
	BARANO-ORENBURGSKOYE Complex Launch Site No 1 (SOFIYE ALEKSEYEVSKOYE) Launch Site No 2 (BARANO-ORENBURGSKOYE)		44-15-30N 131-23-00E 44-19-45N 131-30-15E	I I	4 4		Complete Complete
1	BAYRAM-ALI Launch Complex Launch Site No 1 (BAYRAM-ALI)		37-46-00N 62-12-00E	III	4		Complete
ν '	BELOKOROVICHI Launch Complex Launch Site No 1 (OLEVSK 1) Launch Site No 2 (OLEVSK 2) Launch Site No 3 (RUDNYA ZLOTINSKAYA)		51-08-45N 28-03-30E 51-10-30N 28-00-15E 51-04-30N 28-07-00E	I I IV (M	4 4 R) 3		Complete Complete Complete
	BELOMORSK Launch Complex Launch Site No 1 (RAMOYE)		64-26-15N 34-18-15E	III	4		Complete
	BORSHCHEV Launch Complex Launch Site No 1 (SKALA PODOLSKAYA 1) Launch Site No 2 (SKALA PODOLSKAYA 2)		48-51-00N 26-08-30E 48-53-15N 26-03-30E	I	4 4		Complete Complete
	BREST Launch Complex Launch Site No 1 (BREST 1) Launch Site No 2 (BREST 2) BRODY Launch Complex		51-49-00N 24-01-00E 51-51-45N 24-01-45E	II II	4 4		Complete Complete
	Launch Site No 1 (BRODY 2) Launch Site No 2 (BERESTECHKO) Launch Site No 3 (BRODY 1)		50-13-15N 25-05-00E 50-20-15N 25-05-30E 50-06-00N 25-12-00E	I I IV (Ml	4 4 R) 3		Complete Complete Complete
	BYKHOV Launch Complex Launch Site No 1 (SLEDYUKI)		53-41-30N 30-20-30E	II	4		Complete
	DERAZHNYA Launch Complex Launch Site No 1 (DERAZHNYA 1) Launch Site No 2 (DERAZHNYA 2) Launch Site No 3 (KHMELNITSKIY)		49-21-00N 27-26-30E 49-26-30N 27-29-00E 49-24-45N 27-08-45E	II	4 4 3		Complete Complete Complete

TABLE 3. (Continued)

NO OF PADS/ DATE OF LATEST ESTIMATED CONSTR. LOCATION* BE NUMBER COORDINATES TYPE LAUNCHERS PHOTOGRAPHY STATUS DISNA Launch Complex Launch Site No 1 (DISNA) 55-35-15N 28-15-45E Complete Launch Site No 2 (ZELKI) 55-36-00N 28-24-30E Complete Launch Site No 3 (BORKOVICHI) 55-42-00N 28-27-15EH Complete DOLINA Launch Complex Launch Site No 1 (DOLINA 1) Launch Site No 2 (DOLINA 2) 49-04-00N 24-03-30E Complete 49-06-15N 24-08-30E Complete Launch Site No 3 (BOLEKHOV) 49-06-45N IV (MR) 23-51-15E 3 Complete DROGOBYCH Launch Complex Launch Site No 1 (MEDENITSA) 49-22-00N 23-45-30E Complete Launch Site No 2 (DROGOBYCH) 49-24-45N 23-34-45E Complete Launch Site No 3 (STRYY) 49-16-30N 23-43-00E IV (MR) 3 Complete DYATLOVO Launch Complex Launch Site No 1 (DYATLOVO) 53-33-00N 25-16-30E 4 Complete Launch Site No 2 (BEREZOVKA) 53-35-30N 25-17-45E Complete Launch Site No 3 (ZBLYANY) 53-36-15N 25-26-30E Complete GELLI Launch Complex Launch Site No 1 (KAKASHURA) 42-39-15N 47-27-00E IV (IR) 3 Complete Launch Site No 2 (GELLI) 42-45-45N IV (IR) IV (IR) 47-28-15E Complete Launch Site No 3 (PARAUL) 42-47-45N 47-23-00E 3 Complete GOMEL Launch Complex Launch Site No 1 (BORKHOV 1) 52-18-45N 30-43-00E Complete Launch Site No 2 (BORKHOV 2) 52-24-45N 30-38-30E II 4 Complete **GRANOV Launch Complex** Launch Site No 1 (GRANOV 1) 48-56-15N 29-30-30E H 4 Complete Launch Site No 2 (GRANOV 2) 48-49-30N 29-29-15E IV (IR) Late Launch Site No 3 (KALNIK) 48-59-30N 29-22 15E IV (IR) 3 Mid GRESK Launch Complex Launch Site No 1 (GRESK 1) Launch Site No 2 (GRESK 2) 53-14-50N 27-42-15E Complete 53-17-00N 27-41-15E 4 Complete Launch Site No 3 (URECHYE) 53-11-30N 27-58-30E 4 Complete GROZNYY Launch Complex Launch Site No 1 (SUNZHENSKOYE) 43-08-00N 44-55-00E Complete Launch Site No 2 (NESTEROVSKAYA) 43-12-00N 44-57-00E Complete Launch Site No 3 (ACHKHOY-MARTAN) 43-10-00N 45-11-00E IV (MR) 3 Complete GUSEV Launch Complex Launch Site No 1 (GUSEV 1) 54-41-30N 22-05-15E Complete Launch Site No 2 (GUSEV 2) 54-44-15N 22-04-15E T Complete GVARDEYSK Launch Complex Launch Site No 1 (GVARDEYSK 2) Launch Site No 2 (GVARDEYSK 1) 54-40-30N 21-08-00E Complete 54-45-15N 21-09-15E Complete

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LOCATION*	BE NUMBER	COORDII	NATES	TYPE	NO OF PADS/ LAUNCHERS	DATE OF LATEST PHOTOGRAPHY	ESTIMATED CONSTR. STATUS	
JELGAVA Launch Complex Launch Site No 1 (IECAVA 1) Launch Site No 2 (IECAVA 2) Launch Site No 3 (IECAVA 3)		56-39-45N	24-03-45E 24-08-00E 24-20-30E	II II IV (MR)	4 4) 3		Complete Complete Complete	•
JONAVA Launch Complex Launch Site No 1 (KARMELAVA) Launch Site No 2 (JONAVA)			24-06-00E 24-14-15E	II II	4 4		Complete Complete	
KAMENETS-PODOLSKIY Launch Complex Launch Site No 1 (KAMENETS-PODOLSKIY) Launch Site No 2 (DUNAYEVTSY)			26-42-30E 26-59-15E	II II	4 4		Complete Complete	
KIVERTSY Launch Complex Launch Site No 1 (KIVERTSY 1) Launch Site No 2 (KIVERTSY 2) Launch Site No 3 (TROSTYANETS) KONKOVICHI Launch Complex			25-30-45E 25-36-15E 25-39-15E	I I II	4 4 4		Complete Complete Complete	
Launch Site No 1 (PETRIKOV) Launch Site No 2 (KONKOVICHI)		52-10-30N 52-15-30N	28-24-30E 28-37-45E	I I	4 4		Complete Complete	
KOROSTEN Launch Complex Launch Site No 1 (KOROSTEN 1) Launch Site No 2 (KOROSTEN 2)		50-51-45N 50-52-30N	28-18-45E 28-30-30E	II II	4 4		Complete Complete	
KOZHANOVICHI Launch Complex Launch Site No 1 (KOZHANOVICHI 1) Launch Site No 2 (KOZHANOVICHI 2)		52-10-30N 52-11-45N	27-51-30E 27-48-30E	I	4 4		Complete Complete	
KRASKINO Launch Complex Launch Site No 1 (KRASKINO)		42-44-00N	130-40-45E	II	4		Complete	
KRASNOZNAMENSK Launch Complex Launch Site No 1 (VIESVILLE) Launch Site No 2 (RAGNIT)		55-01-30N 55-01-30N	22-23-00E 22-11-30E	I I	4 4		Complete Complete	
KREMOVO Launch Complex Launch Site No 1 (PROBABLE) (KREMOVO) Launch Site No 2 (PROBABLE) (LYALICHI)			132-20-39E 132-26-26E	I I	4 4		Complete Complete	
KROLEVETS Launch Complex Launch Site No 1 (KROLEVETS 1) Launch Site No 2 (KROLEVETS 2) Launch Site No 3 (BEREZA)		51-36-45N 51-40-45N 51-43-45N	33-28-45E 33-29-30E 33-43-45E	III III	4 4 4		Complete Complete Complete	
KURGANCHA Launch Complex Launch Site No 1 (KURGANCHA 1) Launch Site No 2 (KURGANCHA 2) Launch Site No 3 (TYM)		39-37-15N 39-37-30N 39-35-15N	65-54-00E 65-57-15E 65-42-15E	I I IV (MF	4 4 2) 3		Complete Complete Complete	

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TABLE 3. (Continued) NO OF PADS/ DATE OF LATEST ESTIMATED CONSTR LOCATION* BE NUMBER COORDINATES TYPE LAUNCHERS PHOTOGRAPHY STATUS LEBEDIN Launch Complex Launch Site No 1 (LEBEDIN 1) 50-33-00N $34\text{-}26\text{-}00\mathrm{E}$ Complete Launch Site No 2 (LEBEDIN 2) 50-35-45N 34-24-45E III Complete Launch Site No 3 (LEBEDIN 3) 50-38-00N 34-27-30E Ш 4 Complete LIDA Launch Complex Launch Site No 1 (LIDA 1) 53-47-00N 25-21-30E Complete Launch Site No 2 (LIDA 2) 53-57-00N $25\text{-}28\text{-}00\mathrm{E}$ Complete LUTSK Launch Complex Launch Site No 1 (LUTSK 1) 50-46-45N 25-04-15E Complete Launch Site No 2 (LUTSK 2) 50-50-15N 25-03-00E Complete Launch Site No 3 (VLADIMIR-VOLYNSKIY) 50-48-30N 24-42-30E IV (MR) 3 Complete MARINA GORKA Launch Complex Launch Site No 1 (MARINA GORKA) 53-26-30N 27-45-45E H 4 Complete MAYKOP Launch Complex Launch Site No 1 (KURDZHIPSKAYA) 40-00-45E 44-31-45N 4 3 Complete Launch Site No 3 (SHIRVANSKAYA) 39-54-00EIV (MR) 44-25-30N Complete MOLOSKOVITSY Launch Complex Launch Site No 1 (MOLOSKOVITSY 1) Launch Site No 2 (MOLOSKOVITSY 2) 59-28-45N 29-06-00EComplete 59-29-30N 29-12-30E Complete Launch Site No 3 (GURLEVO) IV (MR) 59-25-30N 28-52-30E 3 Complete MUKACHEVO Launch Complex Launch Site No 1 (MUKACHEVO 1) 48-19-00N 22-31-00E Complete Launch Site No 2 (MUKACHEVO 2) 48-19-30N 22 - 37 - 45E1 Complete NADVORNAYA Launch Complex Launch Site No 1 (PARYSHCHE) Launch Site No 2 (NOVA VES) 48-38-00N 24-42-00E Complete 48-39-30N 24-48-15E Complete Launch Site No 3 (OTYNYA) 48-47-45N 24-50-15E IV (MR) 3 Complete NIGRANDE Launch Complex Launch Site No 1 (NIGRANDE) 56-31-00N 22-02-15E Complete Launch Site No 2 (SKRUNDA) 56-35-45N 21-49-15E IV (IR) Complete Launch Site No 3 (VAINODE) 56-28-30N 21-50-15E IV(IR) Mid NOVOSYSOYEVKA Launch Complex Launch Site No 1 (NOVOSYSOYEVKA 1) Launch Site No 2 (NOVOSYSOYEVKA 2) 44-11-30N 133-26-00E Complete IV (IR) IV (IR) 44-07-45N 133-27-30E Mid Launch Site No 3 (NOVOSYSOYEVKA 3) 44-07-45N 133-25-45E 3 Early OSTROG Launch Complex Launch Site No 1 (OSTROG 1) 50-14-30N 26-44-00E Complete Launch Site No 2 (OSTROG 2) 50-17-15N 26-41-30E Complete OSTROV Launch Complex Launch Site No 1 (ASANOVSHCHINA) 57-32-45N 28-12-00E Complete Launch Site No 2 (SHEVELEVO) 57-37-30N 28-12-45E Complete Launch Site No 3 (REDKINO) 57-24-30N IV (MR) 28-26-45EMid

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LOCATION*	BE NUMBER	COORDINATES	TYPE	NO OF PADS/ LAUNCHERS	DATE OF LATEST ESTIMATED CONSTR. PHOTOGRAPHY STATUS
	1 55 110.11	1		LAUNCHERS	PHOTOGRAPHY STATUS
PAPLAKA Launch Complex Launch Site No 1 (PAPLAKA 1) Launch Site·No 2 (PAPLAKA 2)		56-24-00N 21-15-30E 56-25-30N 21-15-30E	I I	4 4	Complete Complete
PERVOMAYSK Launch Complex Launch Site No 1 (KAMENNYY MOST) Launch Site No 2 (SEMENOVKA 1) Launch Site No 3 (SEMENOVKA 2)		47-58-30N 30-53-00E 47-58-45N 30-59-30E 47-53-45N 30-57-30E	IV (IR	2) 3	Complete Complete Complete
PINSK Launch Complex Launch Site No 1 (IVANOVO) Launch Site No 2 (MOTOL)		52-10-45N 25-41-00E 52-12-45N 25-44-45E		4 4	Complete Complete
POLOTSK Launch Complex Launch Site No 1 (POLOTSK 1) Launch Site No 2 (POLOTSK 2)		55-22-45N 28-44-00E 55-24-15N 28-33-30E		4 4	Complete Complete
POSTAVY Launch Complex Launch Site No 1 (POSTAVY 1) Launch Site No 2 (KOZYANY) Launch Site No 3 (POSTAVY 2)		55-09-45N 26-54-15E 55-20-30N 26-51-30E 55-06-15N 27-00-15E	II	4 4 1R) 3	Complete Complete Mid
PRUZHANY Launch Complex Launch Site No 1 (PRUZHANY 1) Launch Site No 2 (PRUZHANY 2)		52-30-30N 24-08-15E 52-33-00N 24-07-00E	II II	4 4	Complete Complete
RAKVERE Launch Complex Launch Site No 1 (SIMUNA) Launch Site No 2 (VAIKE MAARJA)		59-08-30N 26-26-30E 59-11-30N 26-20-45E		4 4	Complete Complete
RISTI Launch Complex Launch Site No 1 (RISTI 1) Launch Site No 2 (RISTI 2)		59-04-00N 24-03-15E 59-06-30N 24-06-30E		4 4	Complete Complete
ROZHDESTVENKA Launch Complex Launch Site No 1 (ROZHDESTVENKA)		45-47-15N 133-43-15E	II	4	Complete
RUZHANY Launch Complex Launch Site No 1 (KRUPA 1) Launch Site No 2 (KRUPA 2)		52-48-15N 24-42-00E 52-49-30N 24-45-30E		4 4	Complete Complete
SARY OZEK Launch Complex Launch Site No 1 (KARA BABAU 1) Launch Site No 2 (KARA BABAU 2) Launch Site No 3 (KARA BABAU 3)		44-32-00N 77-46-45E 44-31-00N 77-58-45E 44-31-00N 77-43-00E	IV (IR		Complete Complete Late
SATEIKIAI Launch Complex Launch Site No 1 (SALANTAI 1) Launch Site No 2 (SALANTAI 2) Launch Site No 3 (ZEMAICIU KALVARIJA)		55-59-45N 21-38-00E 56-02-15N 21-41-30E 56-01-30N 21-53-30E	I I	4 4 3	Complete Complete Complete
SIMFEROPOL Launch Complex Launch Site No 1 (MAZANKA) Launch Site No 2 (BALKI)		44-54-15N 34-20-00E 44-57-15N 34-25-45E	2 I	4 4	Complete Complete

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TABLE 3. (Continued)

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LOCATION*	BE NUMBER	BE NUMBER COORDINATES		TYPE NO OF PADS/ LAUNCHERS		DATE OF LATEST PHOTOGRAPHY	ESTIMATED CONSTR. STATUS	
SMORGON Launch Complex					 			
Launch Site No 1 (SMORGON 1)		54-31-45N 26-17	-30E	III	4	1	Complete	
Launch Site No 2 (SMORGON 3)		54-36-15N 26-23	-15E	III	4	1	Complete	
Launch Site No 3 (SMORGON 2)		54-26-15N 26-18		IV (IR)			Late	
OKAL Launch Complex								
Launch Site No 1 (SOKAL 1)		50-23-00N 24-18	-30E	I	4	1	Complete	
Launch Site No 2 (SOKAL 2)		50-27-30N 24-20	-45E	I	4	1	Complete	
Launch Site No 3 (SOKAL 3)		50-20-15N 24-26	-00E	IV (MR) 3		Complete	
OVETSK Launch Complex								
Launch Site No 1 (SLAVSK 1)		54-59-15N 21-37	-15 E	I	4	1	Complete	
Launch Site No 2 (SLAVSK 2)		55-00-00N 21-29	-00E	I	4		Complete	
UCHAN Launch Complex								
Launch Site No 1 (NOVITSKOYE)		43-01-45N 133-17	-15E	I	4	1	Complete	
Launch Site No 2 (SEVERNYY SUCHAN)		43-10-00N 133-20	-00E	I	4		Complete	
AURAGE Launch Complex								
Launch Site No 1 (TAURAGE 3)		55-05-15N 22-19		I	4	1	Complete	
Launch Site No 2 (TAURAGE 1)		55-10-15N 22-20	-45E	I	4		Complete	
AYBOLA Launch Complex								
Launch Site No 1 (TAYBOLA 1)		68-28-15N 33-15	-15E	IV (IR)	3	1	Complete	
Launch Site No 2 (TAYBOLA 2)		68-30-00N 33-23		IV (IR)		1	Complete	
Launch Site No 3 (TAYBOLA 3)		68-25-45N 33-29		IV (IR)			Complete	
ORVA Launch Complex				. ,				
Launch Site No 1 (TORVA 1)		57-56-30N 26-04	-30E	I	4	1	Complete	
Launch Site No 2 (TORVA 2)		57-59-15N 26-05	-15E	I	4		Complete	
Launch Site No 3 (TSIRGULIINA)		57-49-45N 26-12		IV (MR		1	Complete	
GOLNYY Launch Complex					, *	1	V	
Launch Site No 1 (UGOLNYY)		64-46-15N 177-58	-00E	II	4		Complete	
KMERGE Launch Complex								
Launch Site No 1 (VEPRIAI)		55-08-00N 24-38	-45E	I	4	1	Complete	
Launch Site No 2 (UKMERGE)		55-11-15N 24-42		I	4		Complete	
MAN Launch Complex								
Launch Site No 1 (MOLODETSKOYE)		48-53-45N 30-27	-45E	I	4	1	Complete	
Launch Site No 2 (MANKOVKA)		48-57-45N 30-24	-00E	I	4	1	Complete	
Launch Site No 3 (KISHENTSY)		49-00-15N 30-13-		IV(MR)			Complete	
SOVO Launch Complex								
Launch Site No 1 (OVRUCH 1)		51-17-45N 28-16-	00E	I	4	1	Complete	
Launch Site No 2 (OVRUCH 2)		51-18-45N 28-10-	30E	I	4	1	Complete	
Launch Site No 3 (LIPNIKI)		51-12-00N 28-26-	30E	II	4		Complete	
ZHGOROD Launch Complex								
Launch Site No 1 (UZHGOROD)		48-33-30N 22-13-	30E	II	4		Complete	
OBIL Laurah Complex								
ORU Launch Complex Launch Site No 1 (VORU 1)		57-46-00N 26-47-	1510	II	4		Complete	
Launch Site No 2 (VORU 2)				11	4 4	1	Complete	
Daunen Sice No z (VURU z)		57-49-15N 26-50-	SOE	11	4		Complete	

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LOCATION*	BE NUMBER	COORDINATES			NO OF PADS/ LAUNCHERS	DATE OF LATEST PHOTOGRAPHY	ESTIMATED CONST	
VSELYUB Launch Complex Launch Site No 1 (VSELYUB 1) Launch Site No 2 (VSELYUB 2)		53-46-15N 53-48-00N	25-43-00E 25-46-45E	I I	I 4 I 4		Complete Complete	
YELSK Launch Complex Launch Site No 1 (YELSK 1) Launch Site No 2 (YELSK 2)		51-42-00N 51-47-00N	29-12-30E 29-18-00E	I I	4 4		Complete Complete	
ZAGARE Launch Complex Launch Site No 1 (ZAGARE 1) Launch Site No 2 (ZAGARE 2) Launch Site No 3 (LIELELEJA)		56-23-15N 56-29-00N 56-24-00N	23-19-30E 23-21-30E 23-36-45E	I I IV (MR)	4 4 3		Complete Complete Complete	
ZHITOMIR Launch Complex Launch Site No 1 (ZHITOMIR 1) Launch Site No 2 (ZHITOMIR 2) Launch Site No 3 (BERDICHEV)		50-04-45N 50-10-15N 50-05-45N	28-16-15E 28-16-00E 28-22-45E	II II	4 4 4		Complete Complete Complete	
ZHMERINKA Launch Complex Launch Site No 1 (GNIVAN) Launch Site No 2 (ZHMERINKA) Launch Site No 3 (VINNITSA) ZHURAVKA Launch Complex Launch Site 1 (ZHURAVKA)		49-09-15N 49-10-30N 49-17-30N 54-36-30N	28-12-15E 28-04-45E 28-20-15E 76-40-45E	II II IV (MR)	4 4 3 4		Complete Complete Complete Complete	
ZNAMENSK Launch Complex Launch Site No 1 (ZNAMENSK 1) Launch Site No 2 (ZNAMENSK 2)		54-33-00N 54-35-30N	21-11-15E 21-08-45E	I I	4 4		Complete Complete	

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^{*}TDI site designators are indicated in parentheses.

