NATIONAL PHOTOGRAPHIC INTERPRETATION CENTER

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imagery analysis report

SAL-Related Activities Summary Report

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Top Secret

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INTRODUCTION

1. (TSR) This report is the sixth in a series of reports on SAL-related activities to be done by the National Photographic Interpretation Center. The report covers the period from [redacted] and updates the preceding SAL Summary Report published in June 1980. 25X1

NPIC [redacted] S-002/80, *SAL-Related Activities: Summary Report,* [redacted] *(S),* Jun 80 (TOP SECRET [redacted] 25X1 25X1

It contains five sections which deal with strategic land-based missiles (section 1), submarine-launched ballistic missiles (section 2), cruise missiles (section 3), long-range aviation (section 4), and ADV-2 (section 5).

2. (TSR) Pertinent concealment, camouflage, and deception activity is included in the discussion of the various substantive areas.

3. (TSR) Broad-area search [redacted] was launched during this reporting period. Information derived from analysis of the first bucket [redacted] is included. No high-resolution film return [redacted] vehicle was in operation during this reporting period. 25X1 25X1 25X1

HIGHLIGHTS

4. (TSR) Highlights of this report are summarized below:

   a. Buildup of silo construction material was continuing at Tyuratam (paragraphs 38 and 49).

   b. The 32 dismantled ABM launch facilities at launch positions at Moscow were earth covered (paragraph 86)

   c. New phased-array radar under construction near Moscow (paragraphs 90 through 93)

   d. Buildup of radar construction components at Gomel indicates a new deployed ABM-related radar may be under construction (paragraphs 101 through 103)

   e. D-III SSBN unit 12 was in the final phase of fitting-out (paragraph 106)

   f. Indications of possible D-III SSBN construction beyond unit 12 (paragraph 108)

   g. Launch preparations at Severodvinsk probably for Typhoon SSBN (paragraph 110)

   h. NE-04/Typhoon missile loading facility at Severodvinsk (paragraph 112)

   i. Dismantled Y-Class SSBN unit 4 returned to construction hall (paragraph 115)

   j. Possible dismantling of Y-I SSBN (paragraph 117)

   k. High count of 157 BACKFIRE observed during July (see aircraft tables)

   l. Possible correlation between ADV-2 testing and BACKFIRE mounted [redacted] airframe (paragraphs 175 through 184) 25X1

[redacted]

LIST OF ACRONYMS AND ABBREVIATIONS

This list in its entirety is UNCLASSIFIED

ABM	Antiballistic missile
ALCM	Air-launched cruise missile
ARD(D)	Floating drydock
AOSR	Radiological liquid carrier
ASAT	Antisatellite
ASM	Air-to-surface missile
CAN/CAP	Canister/capsule
CSF	Complex support facilities
FTC	Flight test center
GSE	Ground support equipment
HE	High explosives
ICBM	Intercontinental ballistic missile
LAD	Launch assist device
LCF	Launch control facility
LRA	Long-range aviation
MSPT	Multisystem propellant transporter
MSTC	Missile/space test center
MTC	Missile test center
NMTC	Naval missile test center
NPIC	National Photographic Interpretation Center
NWPG	Nuclear weapons proving ground
PAT	Payload-associated transporter
PBV	Postboost vehicle
PGCS	Propulsion guidance control section
POE	Piece(s) of equipment
R&D	Research and development
RP	Reporting position
RTP	Rail-to-road transfer point
SAL	Strategic arms limitation
SALT	Strategic Arms Limitation Treaty
SLBM	Submarine-launched ballistic missile
SMRA	Silo materials receiving area
SNA	Soviet naval aviation
SSB	Fleet ballistic missile submarine
SSBN	Nuclear-powered fleet ballistic missile submarine
SSGN	Nuclear-powered guided missile submarine
SSN	Nuclear-powered submarine
T/E	Transporter erector
TSA	Temporary support area
VLF	Very low frequency
YRSN	Nuclear ship support barge

SECTION 1

Strategic Land-Based Missiles

OFFENSIVE MISSILE ACTIVITY

5. (TSR) From [redacted] at least partial coverage was acquired of all 19 operational ICBM complexes, and 1,196 of the 1,398 deployed launch silos were observed at least once. Silo conversion was continuing at nine launch groups containing 66 launchers. All of the silos under conversion are in the mid-to-late stage of construction. The following table summarizes the coverage of deployed ICBM silos. The table does not reflect repetitive coverage. 25X1

SS-11 Complexes	Number of Launchers	Number of Launchers Observed at Least Once	Percent Observed at Least Once
Drovyanaya	50	50	100
Gladkaya	60	60	100
Olovyannaya	90	90	100
Perm	80	80	100
Svobodnyy	60	55	92
Teykovo	80	51	64
Subtotal	420	386	92
SS-13 Complexes			
Yoshkar-Ola	60	53	88
Subtotal	60	53	88
SS-11/17 Complexes			
Kostroma	90	77	86
Yedrovo	110	53	48
Subtotal	200	130	65
SS-11/19 Complexes			
Derazhnya	90	37	41
Kozelsk	110	97	88
Pervomaysk	90	90	100
Tatishchevo	120	103	86
Subtotal	410	327	80
SS-18 Complexes			
Aleysk	30	30	100
Dombarovskiy	64	64	100
Imeni Gastello	52	45	86
Kartaly	46	45	98
Uzhur	64	64	100
Zhangiz-tobe	52	52	100
Subtotal	308	300	97
Total	1,398	1,196	86

Modernized SS-11

6. (TSR) At least partial coverage was obtained of all six modernized complexes. Of the 420 launch sites, 386 were seen. Periodic maintenance involving one launch group at each of the five complexes was seen.

Drovyanaya

7. (TSR) All 50 launch sites and all of the complex support facilities were seen. On [redacted] a training exercise was underway at the training site. Several vehicles were on the apron by the open silo door. The missile canister was visible in the silo. Periodic maintenance was observed in Launch Group I during June. No other significant activity was observed. 25X1

Gladkaya

8. (TSR) All 60 launch sites and all of the complex support facilities were seen. Periodic maintenance was observed in Launch Group G during June. No other significant activity was observed.

Olovyannaya

9. (TSR) All 90 launch sites and all of the complex support facilities were seen. The possible silo loading/unloading observed in Launch Group H in April and May was completed during June. Periodic maintenance was observed in Launch Group G during July. A silo loading exercise was underway at the training site on [redacted] when a canvas-covered missile transporter, a silo loader, a truck-mounted crane, and eight support vehicles were on the apron. The canister was visible in the silo. Canvas/netting was on the aprons at site 35F, 38F, and 96L. 25X1 25X1

[redacted] 25X1

Perm

10. (TSR) All 80 launch sites and all of the complex support facilities were seen. Periodic maintenance was observed in Launch Group G during July. Canvas/netting covered all 30 silo aprons in Launch Groups I and N. The silo doors were not covered.

Svobodnyy

11. (TSR) Fifty-five of the 60 launch sites and all of the complex support facilities were seen. No significant activity was observed.

Teykovo

12. (TSR) Fifty-one of the 80 launch sites and all of the complex support facilities were seen. Periodic maintenance was underway in Launch Group G during June. No other significant activity was observed.

SS-13

Yoshkar-Ola

13. (TSR) Fifty-three of the 60 launch sites and all of the complex support facilities were seen. Modernization continued and was in the late stage in the E group. Modernization has been completed in Launch Groups A, B, C, and D. Probable periodic maintenance was observed at two sites in Launch Group A in August.

SS-11 and SS-17

14. (TSR) Only 130 of the 200 launch sites and 14 of the 20 LCFs (five have been backfilled) at Kostroma and Yedrovo SSM complexes were seen.

15. (TSR) The number of completed SS-17 type IIIH silos remained at 150, and the number of SS-11 type IIID silos remained at 50.

16. (TSR) Fifteen LCFs are operational, and five LCFs remain backfilled.

	Total Launch Groups	SS-11 Launch Groups	SS-17 Launch Groups	Launch Groups Under Conversion
Yedrovo	11	0	11	0
Kostroma	9	5	4	0
Total	20	5	15	0

Kostroma

17. (TSR) Seventy-seven of the 90 launch sites, eight of the nine LCFs, and all of the complex support facilities were seen. Probable periodic maintenance was underway at two sites in Launch Group I during July. The previously reported periodic maintenance in Launch Group Q during May was probably prelaunch activity for the SS-11 launch in early June. This activity continued until mid-July.

Yedrovo

18. (TSR) Fifty-three of the 110 launch sites, six of the 11 LCFs, and all of the complex support facilities were seen. No significant activity was observed.

SS-11 and SS-19

19. (TSR) Complete coverage was obtained at one complex and partial coverage was obtained at the other three complexes. Of the 410 launch sites, 327 were seen.

Complex	Total Launch Groups	SS-11 Launch Groups	SS-19 Launch Groups	Launch Groups Under Conversion	Launch Groups Under Modification
Derazhnya	9	3	6	—	1
Kozelsk	11	5	6	—	—
Pervomaysk	9	3	6	—	1
Tatischevo	12	—	9	3	—
Total	41	11	27	3	2

20. (TSR) The number of completed type IIIG silos was 330, 30 were under construction, and 20 were undergoing modification. The number of type IIID silos remained at 50.

21. (TSR) Probable periodic maintenance was observed at two complexes and involved three launch groups.

Complex	SS-11 Launch Groups	SS-19 Launch Groups	Launch Groups Under Conversion	Launch Groups Under Modification	LCF
Derazhnya					
A		X		X	Undergoing modification*
B		X			Complete
C		X			Complete*
D		X			Complete*
E		X			Complete
F		X			Complete
G	X				Complete
H	X				Complete
I	X				Complete
Kozelsk					
G		X			Complete
H		X			Complete
I		X			Complete
J		X			Complete
K	X				Backfilled
L		X			Complete
M	X				Backfilled
N		X			Complete
O	X				Backfilled
P	X				Backfilled
Q	X				Backfilled
Pervomaysk					
A		X			Complete*
B		X		X	Undergoing modification*
C		X			Complete
D		X			Complete*
E		X			Complete
F		X			Complete
G	X				Complete
H	X				Complete
I	X				Complete
Tatishchevo					
A		X			Complete
B		X			Complete
C		X			Complete
D		X			Complete
E		X			Complete*
F		X			Complete
G		X			Complete
H			X		Ucon
I		X			Complete*
J			X		Ucon
K			X		Ucon
L		X			Complete

*Denotes a modified LCF.

Kozelsk

22. (TSR) Ninety-seven of the 110 launch sites, ten of the eleven LCFs, and all of the complex support facilities were seen. Four of the five backfilled LCFs—MM, OO, PP, and QQ—were unchanged; the fifth, backfilled LCF KK, was not observed. Unidentified activity was observed in Launch Group H in July. At LCF HH, several unidentified vehicles were on the apron and a trench extended from the control support building to the group support area. The area in back of the silo appeared to have been disturbed and the two washer antennas had been excavated. The apron around the silo at each of the launch sites in the group appeared to have been disturbed. At launch site 28H, unidentified vehicles were on the apron, the silo door was open, and the top of the canister was visible. At launch site 30H, the silo door was open and the silo was empty.

Derazhnya

23. (TSR) Thirty-seven of the 90 launch sites, five of nine LCFs, and all of the complex support facilities were seen. Modification of the launch sites and the LCF in Launch Group C was probably completed during July. Modification was continuing in Launch Group A. Periodic maintenance was underway in Launch Groups F and H.

Pervomaysk

24. (TSR) All 90 launch sites, the nine LCFs, and all of the complex support facilities were seen. Modification of the launch sites and the LCF in Launch Group D was completed during August. Modification was continuing in Launch Group B.

Tatishchevo

25. (TSR) One hundred-three of the 120 launch sites, all 12 of the LCFs, and all the complex support facilities were seen. Conversion continued in Launch Groups H, J, and K.

26. (TSR) Post-launch activity was observed in Launch Group C during July and August following the early July launches of two SS-19s. This activity had ended at seven of the nine sites observed in the group by [redacted] 25X1
[redacted] At launch site 22C, the exhaust deflector ring was still on the apron. At launch site 25C, the door was 25X1
open, the exhaust deflector ring was still on the apron, and a truck-mounted crane and numerous vehicles were on the silo apron. A TSA was still present.

27. (TSR) Unidentified activity was observed in Launch Group F beginning in late June. The area around the hardened dome antenna and the launch silo appeared to have been excavated at each of the ten launch sites. In addition, the cover had been removed from several of the hardened dome antennas. There were indications that it was necessary to remove the warhead during this activity. The exhaust deflector ring was on the apron at two launch sites during July, and on [redacted] a type-IV warhead transporter was at launch site 89F. This 25X1
activity appeared to have been completed by [redacted] Similar activity was observed in Launch Group D. At 25X1
several of the sites in this group the area around the hardened dome antenna and the launch silos was disturbed.

28. (TSR) Probable periodic maintenance was observed in Launch Group F during July and August.

SS-18

29. (TSR) Complete coverage was obtained at four of the six complexes and partial coverage was obtained at the other two. Of the 308 launch sites, 300 were seen. Periodic maintenance was observed at five complexes involving nine launch groups.

30. (TSR) The number of completed type IIIF launch sites is now 272. The remaining 36 silos were still under construction. The number of completed LCFs is now 42; six remain under construction.

SS-18 Launch Group Status

Complex	Launch Groups Complete	Launch Groups Ucon
Aleysk	A,B,C,*D*	E*
Dombarovskiy	A,B,C,D,E,*F,* G,*H,*I*	J*
Imeni Gastello	A,B,C,*D,*E,F*G*	H*
Kartaly	A,B,C,D,*E*,G*	F*
Uzhur	A,B,C,D,*E,*F* G,*H*,I*	J*
Zhangiz-Tobe	A,B,C,D,*E,*F* H*	G*
Total Groups	42	6

*Denotes a modified LCF.

Aleysk

31. (TSR) All 30 launch sites, the six LCFs, and all of the support facilities were seen. Conversion was almost complete in Launch Group E. During August, two SS-18 missiles, with [redacted] SS-18 MOD-4 25X1
PBV/PGCS containers, were at the RTP. The dome antennas and/or silo doors of Launch Group D were net covered.

Dombarovskiy

32. (TSR) All 64 launch sites, the ten LCFs, and all of the complex support facilities were seen. Conversion of Launch Group J was almost complete. Training site 33X was completed in August. Two SS-18 missiles with [redacted] SS-18 MOD-4 PBV/PGCS containers were in the RTP receiving area in August. A probable 25X1
propellant transfer operation for an SS-18 MOD-4 PBV propulsion module was observed in the RTP on [redacted] 25X1

[ ] This suggests that the propulsion module is fueled at the RTP prior to being delivered to a site. Probable periodic maintenance was observed in Launch Groups A and F during July. 25X1

Imeni Gastello

33. (TSR) Forty-five of the 52 launch sites, the eight LCFs, and all of the complex support facilities were seen. Conversion was in the very late stages at Launch Group H. Four SS-18 missiles with SS-18 MOD-4 PBV/PGCS containers were in the receiving area of the RTP during July. These missiles are probably for Launch Group G. Minor excavating was underway around the hardened dome antennas at LCF BB and collocated launch site 7B and at LCF CC and collocated launch site 17C. Probable periodic maintenance was observed in Launch Groups B and F during July.

Kartaly

34. (TSR) Forty-five of the 46 launch sites, the seven LCFs, and all of the complex support facilities were seen. Conversion was completed in Launch Group G during July. Conversion was continuing in the very late stages in Launch Group F. Probable periodic maintenance was observed in Launch Group C in early June and in Launch Group F in July.

Uzhur

35. (TSR) All 64 launch sites, the ten LCFs, and all of the complex support facilities were seen. Conversion was completed in Launch Group I between late June and early July. Conversion was continuing in the very late stages in Launch Group J. Two SS-18 missiles and MOD-4 PBV/PGCS containers were in the RTP during July. Probable periodic maintenance was observed in Launch Group D during June and in Launch Group A in late July and early August. Minor excavating was observed around the hardened dome antennas at several of the launch sites in Launch Groups C and F.

Zhangiz-Tobe

36. (TSR) All 52 launch sites, the eight LCFs, and all of the complex support facilities were seen. Conversion of Launch Group H was complete in August. Launch Group G was in the late stages of conversion. During June and July, probable periodic maintenance was observed in Launch Group B. Equipment observed at the RTP during June, July, and August included two SS-18 missiles with [ ] MOD-4 PBV/PGCS containers and a modified LCF capsule with associated cylinders. This equipment is probably for Launch Group H, the most recently converted launch group. 25X1

MISSILE TEST RANGES AND FACILITIES

Tyuratam

37. (TSR) Observations associated with strategic missiles at Tyuratam MSTC included type IIIF and type IIIG silo doors at material handling areas, refurbishment and/or modification activity on seven hardened dome antennas, and postlaunch activity associated with one SS-17 launch, two SS-18 launches, and one SS-19 launch.

38. (TSR) On [ ] two type IIIG (SS-19) silo doors were in the material receiving area of space launch site U1/2. With at least seven, and possibly nine, type IIIG headworks now at Tyuratam, the addition of two silo doors further suggests that preparations are being made to modify existing IIIG sites or convert some of the remaining type IIID (SS-11) sites. However, no construction activity or preparations have yet been observed at the silos. 25X1

39. (TSR) On [ ] four type IIIF silo doors and sections of silo door housings were being offloaded from railcars at an improvised material handling area just outside space launch site J1/2. Since at least four type IIIF headworks had been observed previously, the delivery of the silo doors further suggests that preparations are being made to convert some of the SS-9 sites to SS-18 sites. 25X1

40. (TSR) On [ ] at launch site K2, a silo loader was positioned in front of the closed silo door and two SS-9 stage transporters were next to the service road. Similar activity was observed at this site in October 1979. 25X1

41. (TSR) The hardened dome antennas at launch sites R11, R12, R13, S3, S10, V3, and V8 are probably being refurbished/modified. Similar activity was seen at the modified launch control facility. At some sites, the dome antenna was removed and the antenna base excavated; at others a disruption of dirt around the dome was observed. Similar activity has been taking place at some SS-17, SS-18, and SS-19 sites at deployed complexes.

42. (TSR) The exhaust from a successful launch of an SS-18 from launch test site R7 north on [ ] blew at least 32 apron paving blocks off the apron. Some of the paving blocks landed on the hardened dome antenna which is near the silo. As of [ ] the damaged apron had not been repaired. 25X1 25X1

43. (TSR) The launch points for four ICBM launches from Tyuratam were identified. Table 1 summarizes this activity.

Table 1.
Tyuratam ICBM Launch Activity

This table in its entirety is classified TOP SECRET RUFF

Launch Site	Observation
V7	On [redacted] imagery, the spent LAD was identified
R7N	On [redacted] imagery, the spent LAD was identified and damage to the silo apron was evident; more than 30 of the apron paying blocks had been scattered on both sides of the R7N silo
R7S	On [redacted] imagery, the silo door was open, burn marks were on the silo apron, and the spent LAD was identified
S9N	On [redacted] imagery, the silo door was open and the silo apron was darkened

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Plesetsk

44. (TSR) Significant observations consisted of the installation of the new silo component in the northwest silo at launch site 28; canvas-covered silo components at the SMRA; possible checkout operations at launch site 11; activity at launch site 21; and construction of a tent structure at the RTP.

45. (TSR) The new 3-meter high, double-walled, cylindrical silo component seen on the apron of the northwest silo at launch site 28 and the IIIH door pocket and silo door have been installed in the silo. Also, at site 28, a possible launch control-related building was observed under construction between the two silos.

46. (TSR) In early July, all of the silo components at the SMRA were covered by canvas frame works and remained covered. An LCF capsule was at the SMRA on [redacted], the capsule had been cut into sections and a portion of it removed from the area. By [redacted] the remaining section had also been removed from the SMRA.

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47. (TSR) At launch site 11 on [redacted] a type II warhead van, a truck-mounted crane, and a support vehicle were on the apron next to the site control bunker, and an open-bed cargo truck with a canvas-covered object in the bed of the truck was parked on the GSE alignment markers at the silo. This unidentified activity was terminated between [redacted] and was probably prelaunch activity for an SS-13 Mod-2 launched from Plesetsk on [redacted]

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48. (TSR) Probable refurbishment activity was continuing at Launch Site 21. Numerous crates and five to seven trucks remained in the area.

49. (TSR) A long canvas-covered tent structure, [redacted] was observed on imagery of [redacted] over one of the railspurs at the RTP. The tent structure is similar to another tent-like structure, 59 by [redacted] which was seen 6.0 kilometers east of mobile facility 1 in June 1979.

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50. (TSR) During the reporting period, the canvas covering the silos at Launch Sites 14 and 22 was replaced. No additional activity was observed at the two sites.

*DEFSMAC. 272152Z, Aug 80 (SECRET [redacted]

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**Extracted material is SECRET only.

SEMIPALATINSK NWPG SHAGAN RIVER TEST AREA

51. (TSR) During this reporting period, silo and site construction continued at silo vulnerability areas 23 and 89 and at vulnerability area 108. A vulnerability test was conducted at silo 6 during the reporting period. By the end of August, HE test preparations were underway at silo 5 and at location 116.

Area 23

[redacted]

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[redacted] 25X1

53. (TSR) The test preparations at silo 6 were similar to the preparations observed at the silos subjected to vulnerability tests in September 1979. However, silo 6 was apparently subjected to less overpressure and ground motion than any of the silos in the 1979 tests. This was a result of a greater distance between the rosettas, a greater distance between the silo and the rosettas, a shallower furrow bed, and a smaller arch-roofed simulation structure. In addition, the rosettas consisted of only five drill shafts instead of the usual seven.

54. (TSR) The rosettas were about 30 meters apart and 60 meters from the silo. In 1979, the rosettas were 25 meters apart and 50 meters from the silos. The furrow bed at silo 6 was slightly larger in total area than those observed in 1979, but the furrows were only about [redacted] deep. The best estimate of the furrow depth for the 1979 tests is [redacted] The arch-roofed simulation structure over silo 6 was about [redacted] in length and [redacted] meters in height. The arch-roofed simulation structure used in 1979 was about 20 meters in length and [redacted] meters high. The only feature of the test which appeared to be the same as in the 1979 tests was the position of the large-diameter drill shaft, 45 meters from the silo. 25X1 25X1

55. (TSR) The quantity of HE used at silo 6 was probably less than that used in 1979 because of the variations in the test site described in the previous paragraph. An unusual feature of the test was the removal of the door from the silo. The door was removed during early-stage test preparations and was not replaced for the test. However, some type of closure, with a layer of earth over it, was used to replace the original door which remained on the ground off to one side.

56. (TSR) Modification of silo 5 (modified type IIIG) was almost complete at the end of August. The modified headworks, the door pocket, and the door had been installed in the silo. The preparations at the silo indicate that the test will be similar to recent HE tests conducted at other ICBM silos at Shagan River. Three seven-shaft rosettas were drilled 60 meters from the silo and the large bore drill shaft was 45 meters from the silo. Several prefabricated concrete arch sections were adjacent to the silo on [redacted] indicating that an arch-roofed HE simulation test (HEST) structure would be assembled over the silo. 25X1

57. (TSR) The test preparations at this modified type IIIG silo were slightly different from the preparations observed at silo 2 (standard type IIIG) in September 1979. That silo vulnerability test involved a three-bay HEST structure and three seven-shaft rosettas 50 meters from the silo.

58. (TSR) At silo 3 (type IIIF/SS-18), probable damage was observed for the first time in July. Immediately after the [redacted] test, no damage was observed at the silo although a gap between the east side of the silo and the surrounding soil indicated some horizontal movement or vibration of the silo. The direction of the blast and overpressure from the test was west to east. No activity was observed at the silo from mid-October 1979 until [redacted] when the silo door was opened. Imagery of [redacted] showed that the door was propped up by two external supports. This suggested that the door hinge and/or the hydraulic system in the silo may have been damaged. 25X1 25X1

59. (TSR) No activity was observed at silos 1, 2, and 4 or at silo mockups 7, 8, and 9.

Area 89

60. (TSR) At silo area 89, construction continued at silos 10 through 13. Construction had not been resumed at silo 14 as of the end of August. Silos 10 through 13 were in late stages of construction. Preparations were underway for constructing service aprons and access roads for delivering missiles and capsules. The instrumentation bunkers near each silo were in the mid-to-late stages of construction. Instrumentation cable trenches had been extended from silo 13 to its bunker. No activity was observed at the 30-meter-diameter excavation although a packed-earth road was being extended to the site. No activity was observed at the triple-fence secured, partially underground structure.

61. (TSR) Preparations for the HE calibration test at location 116 were progressing rapidly. Location 116 is just outside the southwest corner of silo area 89. On [redacted] the site consisted of a silo mockup, a large-bore drill shaft, three seven-shaft rosettas, and an instrumentation bunker under construction. Prefabricated concrete arch sections for a HEST structure were adjacent to the silo coring. This calibration test is probably in preparation for future tests at silo area 89 and/or area 108. 25X1

Area 108

62. (TSR) At vulnerability area 108, site construction has been ongoing since the last SAL-related report. At the large trench, additional rectangular conduit sections were installed in the narrow section of the trench. Approximately 220 meters of conduit have been installed to date. Rail sections were next to the trench during most of the reporting period. Rail sections still have not been observed in the bottom of the conduit. Concrete slabs replaced some of the wood panels on top of the conduit, indicating that portions of the conduit were probably complete. A wall was constructed over the western end of the conduit, and the surrounding trench was backfilled to grade level. Approximately 60 meters of prefabricated concrete arch sections were assembled over a portion of the completed conduit. The arches span 180 degrees and are about 15 meters wide at the base.

63. (TSR) No activity was observed at the wide portion of the trench where the traveling gantry crane is positioned.

64. (TSR) A smaller rectangular conduit was under construction in a trench in the center of area 108. The conduit, about 100 meters in length, was almost complete. About 65 meters of concrete arch sections were

assembled over the conduit. These arches spanned about 270 degrees (omega shaped) and the upper part of the conduit was inside the arch. About 15 meters of the arch structure on the east end was being covered with rebar mesh. This suggests that concrete will be poured over this portion of the arches. It is not yet known whether the arches are a part of the structure or for containing HE. If HE is later placed in the arched structure and only the east end of the structure is hardened, then the structure will probably serve as a shock tube or dynamic airblast simulator (DABS). If the entire structure is hardened, then HE will probably be placed throughout the structure and it will serve as a HEST structure. A large-bore shaft was drilled about 75 meters from the west end of the conduit. A probable instrumentation bunker was under construction north of the conduit.

65. (TSR) Little activity was observed at the two silo corings in the southern portion of area 108. The probable silo base and some of the probable silo wall segments were installed in the large coring. Concrete was poured into the wall segments after installation. On [redacted] a silo component similar to a headworks base was adjacent to the coring. The component was assembled from two 180-degree sections. At the smaller silo, additional coring was observed, but no components were delivered for the silo. 25X1

66. (TSR) Two other excavations were observed within area 108. One excavation is parallel to the east fenceline while the other is parallel to the west fenceline. Little activity was observed in the excavations. Small-bore drilling operations were underway adjacent to the trenches during most of the reporting period. The shafts at both excavations were drilled in a row parallel to the excavations. By [redacted] 16 shafts were adjacent to the eastern excavation and eight shafts were adjacent to the western excavation. 25X1

ICBM DEVELOPMENT, PRODUCTION, AND TESTING

Dnepropetrovsk

67. (TSR) Handling rings, some with diameters similar to the diameters of the SS-5 and SS-17 missiles, and other pieces of equipment were adjacent to one of the large assembly/fabrication buildings at Dnepropetrovsk Missile Development Production Center. This equipment, which began to appear in January 1979, may be a part of either SS-5 or SS-17 component or final assembly production lines. If this equipment is a part of a production line, it indicates the probable termination of SS-5 production or a reduction in SS-17 production.

68. (TSR) There is supportive evidence for the termination of SS-5 production and for the reduction of SS-17 production. Dismantling of SS-5 launch sites continues with only four complexes currently operational. SS-17 deployment has been completed and the number of 1980 test launches is much lower than in 1978 and 1979.

Leningrad

69. (TSR) Possible silo coring activity was identified at Leningrad Silo Components R&D Facility on [redacted] in a cleared area in the east-central portion of the facility. The possible coring was in an early stage of construction, having begun between [redacted] An unidentified object was in the center of the excavation. This object does not resemble known silo components and may be related to construction. Tracks for a traveling gantry crane are on either side of the excavation. A mobile crane was adjacent to the excavation and between the parallel tracks. 25X1 25X1 25X1

DEFENSIVE MISSILE ACTIVITY

Sary-Shagan Missile Test Center

Launch Complex B

70. (TSR) During this reporting period, Complex B was observed 15 times (13 complete and two partial coverages). On [redacted] a GALOSH canister was engaged in each of the three surface launch positions. From [redacted] launch position C3 was occupied (canister engaged) each time it was observed and launch positions C1 and C2 were unoccupied. 25X1 25X1

71. (TSR) On [redacted] a CAN/CAP silo loader was observed at the Missile Assembly Checkout Facility. On [redacted] a CAN/CAP silo loader was backed up to the silo at launch position C5. On [redacted] the silo door was open, a canvas cover was over the silo aperture, and a burn mark was around the silo. On [redacted] silo C5 was being refurbished. 25X1. 25X1 25X1

72. (TSR) Construction was continuing on the two possible fueling points.

Launch Complex D

73. (TSR) Launch Complex D was observed 18 times (nine complete and nine partial coverages). At complex D, the sliding shelter on the B-1 building (the probable laser facility) was closed each time it was

imaged. Throughout this reporting period, the inflatable cover over the radome at the EGG HEAD radar remained deflated, thus, showing the longitudinal ribbing on the radome.

Launch Complex F

74. (TSR) Launch Complex F was observed 34 times (18 complete and 16 partial coverages). No activity was observed at launch position 3A. Refurbishment at launch silo 3B followed the April SH-08 missile launch. Refurbishment appeared to be complete by early August and there was little activity around this silo after [redacted] 25X1

75. (TSR) The silo at launch position 3C was undergoing modification or conversion. On [redacted] a mobile crane was in operation at the silo. The northern half of the silo door was removed and, during June and July the silo was being deepened. A crane had removed earth from the base of the silo. The earth was spread over the ground on the northwest side of the silo. By [redacted] a canvas cover had been placed over the silo aperture just inside the silo. Since then, little activity has been observed around the silo; however, the crane remained on the silo apron. 25X1 25X1

76. (TSR) At new launch position 3D, preparations for the first SH-08 missile launch from this launcher were observed in early June. An SH-08 missile transporter was aligned with the launch tube between [redacted] and [redacted] The transporter was not present on [redacted] but had returned with a missile by [redacted] Evidence of a missile launch by [redacted] included a raised empty launch tube, the removal of the work platform from the flame bucket, the burned flame bucket, and all the power conduits covered for the first time. Preparations for a second launch from this launcher were observed between [redacted] An SH-08 transporter was backed up to the launch tube on [redacted] and remained until [redacted] The transporter was not observed on [redacted] the erected launch tube contained an SH-08 missile and a transporter and a checkout van were onsite. The missile and the transporter were not present on [redacted] a missile was again erected in the launch tube and a transporter and checkout van were onsite. 25X1 25X1 25X1 25X1 25X1 25X1 25X1

Operations Support Base

77. (TSR) The Operations Support Base was observed 17 times (eight complete and nine partial coverages). From 12 to 13 GALOSH canisters were observed at the servicing apron in the Explosives and Solid Propellant Handling Facility. Four GALOSH canisters remained at the main hangar of the airfield.

R&D Radar Facilities 1, 2, and 3

78. (TSR) R&D Radar Facility 1 was imaged seven times, while R&D Radar Facilities 2 and 3 were imaged nine times.

79. (TSR) The previously reported possible clutter screen at R&D Facility 1 was externally complete on [redacted] 25X1 25X1

80. (TSR) No significant activity was observed at R&D Radar Facilities 2 and 3.

R&D Complex

81. (TSR) The Sary Shagan R&D Complex, Facility A, was imaged 25 times during the reporting period. The dome on the south building was over the coelostat and the cooling pond was operating on all coverages. There was no activity at or near the north building during the reporting period. By mid-August, the water that was previously standing midway up the drive-in ramp of the north building had evaporated/receded.

[redacted] 25X1

[redacted] 25X1

Moscow ABM Facilities

86. (TSR) The 32 dismantled launchers at the deployed ABM complexes were still inoperative as of [redacted] 25X1
[redacted] Between early June and mid-August all 32 of these positions, including the GSE alignment markers, were covered with dirt. Arch-roof sections and wall sections for a probable GALOSH canister shelter, such as that at complex E05, were brought to complex E24 in late July and early August. Sufficient components for two shelters are at E33, for a second shelter at E05, and for one shelter at E31.

Launch Complex	Date Observed	Launch Positions Observed	GALOSH Canister Engaged	Launchers Dismantled
E05	[redacted]	16	7	8
		12	4	7
		9	4	5
		16	7	8
		16	4	8
		6	4	2
E24		12	6	4
		16	6	8
		16	5	8
		15	6	7
		16	5	8
E31		16	5	8
		16	6	8
		16	6	8
		16	6	8
		10	3/4	5
		4	—	4
		16	6	8
		16	5	8
E33		16	4	8
		16	7	8
		16	7	8
		3	1	2
		16	8	8
		6	6	0
		15	6	7
		16	7	8
		16	7	8

25X1

87. (TSR) The Borovsk ABM Support Facility was observed twice during this reporting period. Forty-six GALOSH canisters were present on [redacted] and 47 on [redacted] Seven curved metal segments of unknown function were brought to an apron near the missile assembly and storage building between [redacted] 25X1 25X1

88. (TSR) The Moscow SAM and ABM Training Facility was observed six times. A GALOSH ABM canister was engaged in the launcher on [redacted] 25X1

89. (TSR) The DOG HOUSE and CAT HOUSE battle management radar facilities were imaged one time and three times, respectively. No significant activity was observed at either facility.

Deployed ABM-Related Radars

90. (TSR) Pushkino Phased-Array Radar (Figure 1) was identified under construction 25.5 nautical miles (nm) north of Moscow on imagery of [redacted] 25X1

91. (TSR) The radar structure is 152-meters square and pyramidal in shape. It is in a large rectangular excavation with an adjacent underground building on the northeast side. The sides of radar face 60, 150, 240, and 330 degrees and are sloped [redacted] from the vertical. Three open trenches extend south about 1,000 meters to an area that will probably contain cooling equipment. Two of the open trenches, one to the east and one to the west, contain large conduit sections. The third trench, to the east, contains pipe sections. 25X1

92. (TSR) Associated facilities include a construction support area and a transformer yard about 1.3 nm to the west. Preliminary construction activity, tree cutting for an access road, was first visible in May 1978. By August 1978, the access road was under construction and clearing was in progress for the construction support facility. In August 1979, the floor of the radar structure was complete and walls were being constructed below ground level on the east and south sides.

[redacted] 25X1

93. (TSR) The latest imagery, acquired on [redacted] showed considerable construction progress since [redacted] The four sloped sides of the radar had been extended upward and a new trench was observed under construction in the transformer yard. The trench spans about 40 percent of the distance to the radar and contains four cableways which were being enclosed in a concrete conduit. About 10 percent of the trench, the portion that originates at the transformer yard, had been backfilled. Construction activity and additional construction material was in the vicinity of the radar. 25X1 25X1

94. (TSR) The Pechora Phased-Array Radar Facility was observed five times. The previously reported possible beam forming/side lobe suppression device was in a late stage of construction. When last observed on [redacted] all of the triangular lattice structures on the western side of the transmitting antenna had been erected on a double row of buried concrete blocks. About 75 percent of the triangular lattice structures on the eastern side of the transmitting antenna had been erected on a double row of buried concrete blocks. 25X1 25X1

95. (TSR) The Lyaki Phased-Array Radar Facility was not covered during this reporting period.

96. (TSR) The Sary-Shagan Phased-Array Radar North was observed once. No significant activity was observed.

97. (TSR) The Ust Kamchatsk Radar Facility was observed five times. No significant activity was observed.

[redacted] 25X1

[redacted] 25X1

98. (TSR) The Mishelevka, Olenegorsk, and Sary-Shagan HEN HOUSE Radar Facilities were imaged five times, seven times, and one time, respectively. No significant activity was observed at any of these radar facilities.

99. (TSR) The Mukachevo and Skrunda HEN HOUSE Radar Facilities were not imaged.

100. (TSR) The Sevastopol HEN HOUSE Radar Facility was imaged 14 times. On [redacted] new paneling was observed being applied to the right antenna face. By [redacted] both antenna faces had been repaneled. 25X1 25X1

Phased-Array Radar Components at Gomel Electronics Plant

101. (TSR) The presence of phased-array radar environmental cover segments and shipping crates at the Gomel Electronics Plant suggests that a new Pechora/Lyaki type phased-array radar is under construction in the USSR. These components are probably not for the newly identified phased-array radar at Pushkino.

102. (TSR) The number of phased-array radar environmental cover segments and shipping crates at this plant has increased since September 1978. These components are similar to those observed during the construction of the Pechora and Lyaki Phased-Array Radars which are now externally complete.

103. (TSR) In September 1978, six environmental cover central segments (108 required for a transmitting antenna) and 15 probable receiver antenna component shipping crates (exact number required has not been determined) were observed at the plant. In May 1979, 24 central segments, 108 environmental cover side segments (108 are required for a transmitting antenna), and 260 shipping crates were present. The number of central segments and shipping crates continued to increase, and on [redacted] 50 environmental cover central segments and 700 receiver antenna shipping crates were present. Because of clouds, the numbers of environmental cover side segments could not be determined. 25X1

SECTION 2

Submarine-Launched Ballistic Missiles

SUBMARINE-LAUNCHED BALLISTIC MISSILES

Submarine Production

Delta-Series SSBN Construction

104. (TSR) Usable coverage of the Severodvinsk complex was obtained on 41 occasions.

105. (TSR) Fitting-out of D-III SSBN unit 11 continued at the main quay of Severodvinsk Shipyard 402 through at least [redacted] the submarine had departed the Severodvinsk complex for its initial sea trials. On [redacted] a D-III SSBN returned and was at the main quay where it remained through [redacted] This was probably unit 11. This unit was probably again on sea trials between [redacted] and on [redacted] A D-III SSBN (probably unit 11) was at the main quay on [redacted] and between [redacted] Positive identification of this submarine as unit 11 was complicated by the presence of another D-III SSBN at Severodvinsk Nuclear Submarine Special Support Facility (NSSSF) between [redacted] This unit was not at the NSSSF after [redacted] 25X1 25X1 25X1 25X1 25X1 25X1

106. (TSR) Launch preparations for D-III SSBN unit 12 continued on launch rail D at construction hall [redacted] unit 12 had been launched and positioned at the main quay where fitting-out continued through at least [redacted] D-III unit 12 was at the calibration facility, which indicates that it is in the final phase of fitting-out and will probably go on sea trials in the near future. 25X1 25X1 25X1

107. (TSR) The movement of flotation device supports from launch rail D to launch rail C on [redacted] suggests that at least one additional D-III SSBN may be launched from construction hall 1. Although the flotation device supports are not in their final alignment, this pattern is similar to the one used during the roll-out and launching of D-III SSBN units 11 and 12. The identification of a Yankee/Delta-type reactor plate on [redacted] and probable Delta-series outer hull plates during late July and early August suggests that continued D-III SSBN production is likely. Based on the pace of launch preparations observed during January and February 1980 for D-III unit 12 and its subsequent roll-out in late May, the roll-out of a submarine on launch rail C could occur during late 1980. 25X1 25X1 25X1

108. (TSR) While evidence for continued D-III SSBN construction is strong, it has been impossible to conduct detailed analysis of pressure hull sections because of the amount of roofcover over the staging areas. This also makes an estimate of other submarine construction programs at Severodvinsk less certain. In addition, prior to the launch of the Oscar SSGN, it was presumed that the new-type reactor plates seen at Severodvinsk were intended for the Typhoon SSBN and/or the SSGN believed to be under construction in hall 1. The launch of the Oscar SSGN, however, made it a logical choice for the new reactor plate and raised the possibility that the Yankee/Delta-type reactor plate may be used on Typhoon-series SSBNs. Similarly, the probable Delta-series outer hull plates could be intended for the Typhoon or for additional units of the Oscar SSGN.

109. (TSR) Although a detailed analysis of the hull sections was not possible, significant movement of hull sections under the sheds was noted during August and indicates that the loading of an undetermined type of submarine hull was probably in progress.

New-Series SSBN Construction

110. (TSR) Preparations for a launch from buildingway 2 of construction hall 3 have been underway since at least [redacted] the launch dock support cradles on the ledges of the launch basin were aligned with launch rail 2. The launch dock which had been outside the launch basin since [redacted] had been returned to the basin and was floating free in front of launch rail 1. Two large flotation devices were on launch rail 2 on [redacted] These devices were used for a weighted test of the launch rails at launch rail 1 prior to the launch of the Oscar SSGN and also prior to the operational use of the transfer facility at the east quay. By [redacted] the trough for the launch dock support cradles had been bridged and the flotation devices were no longer observed. The door of the construction hall was partially opened and the flotation devices had probably been moved inside for a weighted test of the rails which bridge the gap over the sliding caisson. By [redacted] the launch dock had been aligned with launch rail 2. On [redacted] the sliding caisson was open, the gap was bridged by rails, and the flotation devices had been returned to launch rail 2. Launch preparations have remained static since [redacted] however, a launch could occur at any time. The rail systems of launch rails 2 and 3 consist of six rails each, as opposed to two rails on launch rail 1. Therefore, the use of launch rails 2 and 3 permit the launching of heavier submarines. The clearing of the entire length of the launch dock, as well as the testing of the rail system, suggests that a submarine considerably heavier and longer than the Oscar SSGN will be launched, probably the Typhoon. 25X1 25X1 25X1 25X1 25X1 25X1 25X1 25X1 25X1

Severodvinsk Construction Activity

111. (TSR) The installation of roof panels and side walls on the rigid framework over the staging platform and loading rails between construction hall 3 and fabrication building 2 had been completed with the exception of the side wall at the north end of the staging platforms.

112. (TSR) A new T/E was assembled on the quay at Severodvinsk Naval Base West near the new gantry crane. On [redacted] a load simulation test of the T/E was in progress utilizing a load simulator similar to the one seen at Nenoksa Naval Missile Test Center Launch Facility D where the NE-04 missile has been tested. On [redacted] 25X1 25X1

[redacted] a 19-meter NE-04-associated missile railcar similar to the one seen at Nenoksa and also at constructio25X1
hall 3 at Shipyard 402 was in tandem with the T/E. By [redacted] the gantry crane was over the railcar and T/25X1
and a probable missile handling collar was upright on the T/E. The presence of the NE-04-associated equipment suggests that this area will support the Typhoon/NE-04 system. However, the facility could also be used to support other platforms and systems.

113. (TSR) By [redacted] the new arch-roofed building (47 by 9 by 9 meters) in area B was bein25X1
bunkered, and an area was being graded for at least one additional bunker. A railspur was under construction from the bunker toward Severodvinsk Naval Base West.

New-Series SSGN Construction

114. (TSR) Fitting-out of the Oscar SSGN was continuing at the main quay. The Oscar has 24 SS-NX-19 missile tubes, 12 on each side of the sail. SS-NX-19 missile loading trays were attached to the missile tubes on numerous occasions. On [redacted] a possible SS-NX-19 missile airframe was on the quay and on the bow of th25X1
submarine. It could not be determined if this was an actual missile or a training device. The function of the canvas-covered area on the bow of the Oscar SSGN has not been determimed.

SSBN Dismantlements

115. (TSR) **Y-class SSBNs.** Dismantled Y-class units 1 and 2 remained at the main quay at Severodvinsk Shipyard Yagry Island. Some minor topside activity was continuing; however, no reactor work or major reconstruction activity was observed. Unidentified reactor work was continuing on unit 4 at Shipyard 402 through at least [redacted] flotation devices had been attached to the hull, and by [redacted] th25X1
submarine had been positioned inside the launch basin on launch rail A at construction hall 1. Between [redacted] 25X1
[redacted] the submarine had been moved into the construction hall, probably for extensive overhaul/modifica25X1
tion.

116. (TSR) The dismantled Y-class unit 3 remained on the open repairway adjacent to hall 1 at Petrovka Naval Base and Shipyard. The bow and stern sections of the pressure hull may have been rejoined, however, the outer hull plating has not been replaced in this area.

117. (TSR) The active dismantling of an SSBN in compensation for D-III SSBN unit 11 which went on sea trials between [redacted] has not yet been confirmed. The Y-I SSBN at Severodvinsk NSSSF with th25X1
missile tube doors open since [redacted] satisfies the initial phase of dismantlement. The walking deck between th25X1
missile tubes on this submarine was removed between [redacted] (Figure 2). This is the first positiv25X1
indication since the opening of the missile doors that this submarine may be dismantled. Removal of the walking deck has taken place on previous units that were undergoing overhaul and is not a reliable indication of dismantlement. Also, scaffolding was not placed over the sail of any of the previously dismantled Y SSBNs as has been with this SSBN since [redacted] Scaffolding over the sail is normally associated with overhaul rather tha25X1
dismantlement. If this is dismantlement, rather than overhaul, this would be the fifth Y SSBN unit to be dismantled. A crane served, out-of-water position for dismantling a submarine is not presently available at Severodvinsk since the basin gate at Shipyard Yagry Island is blocked because of maintenance. The missile tube doors and missile tubes could be removed while the submarine is still in the water as was done on unit 3 at Petrovka. Additional activity associated with dismantlement must take place before overhaul can be ruled out.

SSBN Overhauls

118. (TSR) **D-class SSBNs.** Overhaul and refueling of the two D-I SSBNs in the repair halls at Shipyard Yagry Island since December 1979 and February 1980 were continuing.

119. (TSR) **Y-class SSBNs.** The Y-I SSBN removed from the repair hall at Shipyard Yagry Island between [redacted] was at the quay for post-sea trials maintenance between [redacted] 25X1
[redacted] The missile tube doors were open for most of that period, and by [redacted] this submarine had departe25X1
the Severodvinsk complex. On [redacted] the Y-I SSBN which had occupied the south bay of repair hall 1 since 25X1
[redacted] had been removed from the hall. Environmental sheds remained over the hull penetrations in th25X1
reactor area, and post-overhaul fitting-out was continuing. No other Y/D SSBN overhaul unit has been identified. The next occupant of the repair hall may be the E-II SSGN presently on the north ledge of the ship-lifting basin.

120. (TSR) Overhaul was completed on one Y-I SSBN and two others were in various stages of over-haul/refueling at Petrovka. Post-overhaul fitting out was completed on the Y-I SSBN which had been removed from the repair hall in April 1980; it had departed the shipyard between [redacted] Significant post25X1
overhaul refit/repair observed on this unit includes probable electronics, bow sonar, and missile-bay work. The Y-I SSBN which entered the repair hall between [redacted] remained inside the hall25X1
The reactor access plate for this unit remained on the quay next to the repair hall. The Y-I SSBN which arrived at the slanted pier in December 1979 was removed from the ARD(T) and was at the main fitting-out quay in late July 1980. A work platform had been installed on the aft part of the sail. All 16 missile tubes were open on this unit throughout the reporting period, except for [redacted] 25X1

121. (TSR) The Y-I SSBN which was at Petropavlovsk K Shipyard Seldavaya Bay in March, returned to Petropavlovsk K Submarine Base and Ship Repair Yard in early June after the completion of minor upkeep and maintenance.

122. (TSR) **H-class SSBNs.** The H-II SSBN which entered the open ARD(D) at Petropavlovsk K Shipard Seldvaya East on [ ] departed the facility by [ ] No significant change has taken place on the H-II SSBN at Rosta since March 1978. 25X1

Tunneling

123. (TSR) Construction was continuing at a slow pace at Strelok Strait Submarine Base Pavlovskogo Bay. A probable steamline is being installed to the first personnel adit. No other significant external activity has been observed. Tunneling at Ara Guba and Sayda Guba was also continuing.

SLBM Test Centers

Nenoksa Naval Missile Test Center

124. (TSR) **Launch Facility D.** Missile-related activity was observed at the facility in June 1980. On [ ] 25X1
[ ] the erector/loader cover, launch tube cover, and crane were outside the facility where they were prior to the launch of an NE-04 in April. The personnel hoist housings and platforms were along the security fence. On [ ] 25X1
[ ] the crane and launch tube cover had been returned to the launch site. On [ ] the erector/loader cover was again in place and a slight discoloration was noted around the launch area. 25X1

125. (TSR) Checkout/repair of the erector/loader was observed in August. On [ ] the erector/- 25X1
loader was partially erected. It had been lowered by [ ] It was raised again on [ ] and work was 25X1
apparently being performed on the mechanism. By [ ] the erector/loader had been lowered. 25X1

126. (TSR) **Launch Facility C.** On [ ] several unidentified objects were on the north side of the 25X1
launch tower building. By [ ] the number of objects had increased to approximately six. They appeared 25X1
to be conical and were [ ] 25X1

Balaklava Missile Test Center

127. (TSR) No significant SLBM activity was observed at Balaklava Missile Test Center during the reporting period.

[ ]

S-003/82 25X1

SECTION 3

Cruise Missiles

CRUISE MISSILE DEVELOPMENT

Testing

128. (TSR) Cruise missile-related activity at Nenoksa Naval Missile Test Center was observed at the cruise missile support area and at Launch Facility A.

129. (TSR) At the cruise missile support area three new SS-NX-19 crates had arrived by [redacted] 25X1 [redacted] a fourth crate was present. On [redacted] three of the SS-NX-19 crates appeared to be open. By [redacted] 25X1 three SS-NX-19 crates had been moved to the RTP across the road. By [redacted] more crates had been moved to 25X1 the RTP. On [redacted] 3 SS-NX-19 crates were at the facility, including two on flatcars at the RTP. (There was a reduction in the number of SS-NX-19 crates at Severodvinsk Naval Missile Storage between [redacted] On 25X1 [redacted] three SS-NX-19 crates were in the old SLBM compound adjacent to the east end of the cruise missile support area. This may mean that the cruise missile support area has been expanded to include this compound. On [redacted] a new SS-NX-19 crate was in front of the high-bay building in the cruise missile support area. A canvas-covered probable airframe was adjacent to the crate and a crane was extended over the airframe. 25X1

130. (TSR) At Launch Facility A, launcher A-2 was turned to an azimuth of [redacted] 25X1 [redacted] the SS-NX-19 loading tray and a crane were adjacent to the launcher. By [redacted] the tray and crane had 25X1 been moved near launcher A-1. By [redacted] two SS-NX-19 crates had been brought into the facility and were between launchers A-2 and A-3.

131. (TSR) Cruise missile activity was observed at Chernomorskoye Missile Test and Evaluation Facility in area B on [redacted] A mobile crane, a crate/canister, and a loading tray were at the twin-tube launcher. The 25X1 launcher was canvas covered when imaged on [redacted] 25X1

132. (TSR) No significant cruise missile activity was observed at Balaklava Missile Test Center or Feodosiya Naval Missile Support Facility.

Reverse side blank

[redacted] *S-003/80* 25X1

SECTION 4

Long-Range Aviation

LONG-RANGE AVIATION

133. (TSR) This portion of the report summarizes SAL-related Soviet air activity. It includes a brief description of unusual BACKFIRE, BEAR, and BISON aircraft activity, as well as tables showing the locations and counts of these aircraft on the dates imaged. All SAL-associated Soviet LRA and SNA bases, all relevant aircraft production facilities, Akhtubinsk FTC, Ramenskoye FTC, Novosibirsk Scientific Institute of Aviation (SIBNIA), and all nine Soviet Arctic staging bases capable of supporting BACKFIRE were imaged.

BACKFIRE Aircraft Activity

Production and Flight Test Center Activity

134. (TSR) At Kazan Airframe Plant Gorbunov 22, a new high count of seven modified BACKFIRE B was observed on [redacted] Also, on the same day, two modified BACKFIRE B were at Akhtubinsk FTC. If the previously reported modified BACKFIRE B remained at Ramenskoye FTC, at least ten modified BACKFIRE B prototypes exist. 25X1

135. (TSR) The previously reported BACKFIRE B with a [redacted] airframe mounted under the port wing was not seen at Akhtubinsk Flight Test Center during this reporting period. However, a BACKFIRE B with a [redacted] airframe mounted under the port wing was seen on [redacted] in the Tupolev area of Ramenskoye FTC. This BACKFIRE with the [redacted] airframe was not seen on subsequent imagery of Ramenskoye. There has been no change in the status of the previously reported BACKFIRE B seen in the new Test, Derelict, and Central Test Area at Ramenskoye. 25X1 25X1 25X1

Long-Range Aviation Activity

136. (TSR) A new high count of 20 BACKFIRE B was observed at Belaya Airfield (Far East Bomber Command) on imagery of [redacted] Observations of this number continued for the remainder of the reporting period except from [redacted] when only 15 BACKFIRE B were present. A new aircraft dispersal area was observed under construction in an area immediately east of the north end of the runway. Initial earth-moving activity was evident as early as [redacted] and by the end of the reporting period, at least three aircraft revetments were under construction. This activity may be for future deployment of additional BACKFIRE to this airfield. Other construction included the hardening of the revetments along the flight line and an additional quonset-type storage building in the ASM support facility. 25X1 25X1 25X1

137. (TSR) The normal high count of BACKFIRE B at Poltava Airfield (Southwest Bomber Command) remained at 19. However, between [redacted] 22 were seen here. During this same period, there was a decrease of five BACKFIRE B at Belaya Airfield. The three additional BACKFIRE B seen at Poltava Airfield during this time may have come from Belaya. BACKFIRE have not been seen at the newly constructed maintenance building in the dispersal area. Sliding doors have recently been added to the front of this building. Construction continued on the tactical air-to-surface missile (TASM) facility near the dispersal area. Three bunkers were constructed and were being earth covered, and a concrete pad was constructed near the bunkers. A hard-surface (paving block) road connects the dispersal area and the TASM facility, and a service road between the concrete pad and the bunkers was being paved. 25X1

138. (TSR) At Soltsy Airfield (Northwest Bomber Command), the count of BACKFIRE B remained at 20. An additional maintenance shelter, similar to the previously reported shelter, was in the early stages of construction in the maintenance area. No changes to the partially disassembled CLEAT were observed.

139. (TSR) The BACKFIRE count at Ryazan/Dyagilevo Airfield, the LRA training base, was five BACKFIRE A and six BACKFIRE B at the end of the previous reporting period. The count had decreased to three A and three B by the end of June. The BACKFIRE B that had been previously reported as having sustained damage to the right wing remained on a hardstand adjacent to the BISON/BLINDER repair area. No significant changes to this aircraft were noted. The decrease of two BACKFIRE A corresponded to the identification of one A in the static display area at Kiyev/Zhulyany Airfield [redacted] on imagery of [redacted] and one A seen at Achinsk Airfield East ([redacted] A static display area is near Achinsk Airfield East. 25X1 25X1

Soviet Naval Aviation Activity

140. (TSR) The count of BACKFIRE B at Bykhov Airfield (Baltic Sea Fleet Air Force) remained stable at 36.

141. (TSR) At Oktyabrskoye Airfield (Black Sea Fleet Air Force), the BACKFIRE B count remained 17. Wing-mounted AS-4 (KITCHEN) missiles were observed on at least four BACKFIRE B on imagery of [redacted] This was the third sighting of wing-mounted AS-4 on a BACKFIRE at this installation. A large ASM storage bunker which has been under construction in the ASM support facility was being earth covered 25X1

142. (TSR) A new high count of 12 BACKFIRE B was observed at Nikolayev/Kulbakino Airfield, the SNA training base, on [redacted] Previous high counts during this period were eight on [redacted] and ten on partial coverage of [redacted] The previously reported BACKFIRE B in the BEAR/BADGER repair depot remained here during the entire reporting period. A summary of the activity involving this aircraft follows. On [redacted] possible engine-related activity was observed; on [redacted] a crane was being used to detach the starboard 25X1 25X1 25X1

wing; by [redacted] the wing had been detached and was lowered from its normal position. Also on [redacted] the horizontal stabilizers had been removed. By [redacted] both wings had been detached and lowered from their normal configuration. On [redacted] the wings had been moved and placed in positions parallel to the aircraft. A horizontal stabilizer was also visible in this area. On [redacted] the BACKFIRE was not in the depot area and had probably been moved into the large hangar. The wing panels and horizontal stabilizers remained in the BACKFIRE parking area. On [redacted] the aircraft was probably in the hangar and the wings had been moved to a storage area adjacent to the hangar and remained there for the remainder of the reporting period. By [redacted] the BACKFIRE had returned to its previous parking position and it remained there until [redacted] when it probably was returned to the hangar. 25X1 25X1 25X1 25X1 25X1 25X1 25X1

Other BACKFIRE Activity

143. (TSR) At Ussuriysk/Vozdvizhenka Airfield (Far East Bomber Command), two BACKFIRE B were present on [redacted] These two aircraft were probably from Belaya Airfield, also in the Far East Bomber Command, where five BACKFIRE were missing during this same time period. 25X1

144. (TSR) On imagery of [redacted] one BACKFIRE B was seen at Kipelovo Airfield (Northern Fleet Air Force). This was the first observation of BACKFIRE at this SNA base which supports BEAR D and BEAR F regiments. There has been increased renovation and construction activity in the northeast dispersal area, in addition to the nine existing parking hardstands in this area, four probable hardstands, one possible hardstand, and a probable parking apron are being added. 25X1

145. (TSR) Six BACKFIRE B were at Olenegorsk Airfield (Northern Fleet Air Force) on [redacted] They may have participated in a combined surface fleet and naval air exercise in progress in the northern sea areas during the latter part of June. BACKFIRE were last seen here in August 1979. 25X1

146. (TSR) One BACKFIRE B was seen for the first time at Kaliningrad/Proveren Airfield (Baltic Fleet Air Force) on [redacted] A BACKFIRE was still in the same revetment on imagery of [redacted] 25X1

147. (TSR) Two additional BACKFIRE A were observed in or near static display facilities. This activity corresponds to the decrease of two BACKFIRE A at Ryazan/Dyagilevo Airfield. One was in the aircraft static display area at Kiyev/Zhulyany Airfield, and the other was at Achinsk Airfield East. An aircraft static display area is near Achinsk Airfield East. There were no changes in the status of the other two BACKFIRE A on static display—at Moscow/Monino Airfield and at Irkutsk Airfield Southeast.

148. (TSR) There has been a gradual increase in the number of AS-4 (KITCHEN) shipping containers in the ASM support facilities at Alekseyevka Airfield (Pacific Ocean Fleet Air Force). A total of 35 AS-4 shipping containers were identified here. Twelve were seen here for the first time in May 1980. Construction was continuing on the parking hardstands in the dispersal area and on the parallel taxiway.

149. (TSR) Construction activity continued in the suspect BACKFIRE area at Ostrov-Gorokhovka Airfield (Baltic Sea Fleet Air Force). To date, no BACKFIRE or related ground service equipment has been seen here.

150. (TSR) On imagery of [redacted] two BACKFIRE B were seen in flight on an easterly heading west-northwest of Chernyakhovsk Airfield [redacted] approximately 45 nm east of Kaliningrad. 25X1 25X1

151. (TSR) All nine Arctic staging bases capable of supporting BACKFIRE were imaged during this reporting period. BACKFIRE were seen only at Olenegorsk Airfield (Northern Fleet Air Force) where six were observed on [redacted] 25X1

BEAR Aircraft Activity

Long-Range Aviation

152. (TSR) An unusually high amount of flight activity was observed at Dolon Airfield (Far East Bomber Command) on imagery of [redacted] when only two BEAR were observed. Normally, 36 BEAR, which make up one BEAR A regiment and one BEAR B/C regiment, are present. These missing aircraft may have deployed to Engels Airfield (Northwest Bomber Command), a BISON base, where 16 BEAR A/B/C were seen on [redacted] and to Mozdok Airfield (Southwest Bomber Command), a BEAR base, where there was a reported increase of seven BEAR B on [redacted] 36 BEAR A/B/C were at Dolon Airfield. ASM activity was in progress at Dolon Airfield on [redacted] when six BEAR B were observed with centerline-mounted AS-3 (KANGAROO) missiles. 25X1 25X1 25X1 25X1

153. (TSR) The high count of 27 BEAR (23 BEAR B and four BEAR C) at Mozdok Airfield (Southwest Bomber Command) on [redacted] probably corresponds to the decrease in BEAR at Dolon Airfield on [redacted] [redacted] Normally, only 20 BEAR B/C are seen at Mozdok. ASM activity was evident on [redacted] when two BEAR B and one BEAR C were observed with mounted AS-3 (KANGAROO) and again on [redacted] when one BEAR B and three BEAR C were seen with mounted AS-3 (KANGAROO). 25X1 25X1 25X1

154. (TSR) The BEAR A and BEAR B/C regiments at Uzin/Chepelevka Airfield (Southwest Bomber Command) were at normal strength. One BEAR B with a mounted AS-3 (KANGAROO) and one AS-3 on a dolly adjacent to a BEAR B were seen on imagery of [redacted] 25X1

[redacted] 25X1

Soviet Naval Aviation

155. (TSR) A high count of 18 BEAR F was observed at Alekseyevka Airfield (Pacific Fleet Air Force) on [redacted] Low counts of five to seven BEAR F were seen from [redacted] Corresponding to the low counts of BEAR F at Alekseyevka Airfield was the presence of from six to nine BEAR F at Khorol Airfield East (Pacific Fleet Air Force) during this same period. The increased number of AS-4 (KITCHEN) shipping containers and the construction and renovation activity in the dispersal area and on the parallel taxiway are all probable indications that this airfield may soon receive a complement of BACKFIRE. 25X1

156. (TSR) There was no change in the status of the static display BEAR at Irkutsk Airfield Southeast, Moscow/Monino Airfield, or Voroshilovgrad Airfield Southeast.

157. (TSR) At Khorol Airfield East (Pacific Fleet Air Force), the BEAR D reconnaissance regiment was seen at its normal strength throughout this period. From six to nine BEAR F were seen here between [redacted] and [redacted] and probably were the BEAR F missing from Alekseyevka Airfield. 25X1 25X1

158. (TSR) The BEAR D and BEAR F regiments at Kipelovo Airfield (Northern Fleet Air Force) were seen at normal strength during this reporting period. One BACKFIRE B was seen here on imagery of [redacted] [redacted] This was the first sighting of BACKFIRE at this naval aviation base. Continuing construction and renovation in the dispersal area may be an indication of future deployment of aircraft other than BEAR. 25X1 25X1

159. (TSR) BEAR were not at Kirovskoye Airfield (Black Sea Fleet Air Force) during this period because of runway repair activity.

160. (TSR) The one BEAR F Variant was seen at Severomorsk Airfield (Northern Fleet Air Force) throughout this reporting period.

Other BEAR Activity

161. (TSR) One BEAR C, one BEAR C Modified, one BEAR D, and one BEAR F were seen at Akhtubinsk FTC during this reporting period. At Ramenskoye FTC, one BEAR A and up to five BEAR F were seen.

162. (TSR) Five BEAR F Variant were usually seen at Taganrog Airframe Plant Dimitrov 86 during this reporting period, and one BEAR C Modified and one BEAR F were at Kuybyshev Airframe Plant Lenin 18.

163. (TSR) Normal BEAR activity was observed at Belaya Tserkov Airfield where from five to nine BEAR A/B/C were seen in the repair facility.

164. (TSR) BEAR D and BEAR F were seen in normal strength at Nikolayev/Kulbakino Airfield and at the associated repair facility.

165. (TSR) One BEAR F was at Saki Airfield (Black Sea Fleet Air Force) on [redacted] and on all subsequent imagery through [redacted] The BEAR was not seen on imagery of [redacted] 25X1 25X1

166. (TSR) BEAR were reported at two BISON bases during this period. On imagery of [redacted] two BEAR A/B/C were at Ukraina Airfield (Far East Bomber Command), and on [redacted] 16 BEAR A/B/C were at Engels Airfield (Northwest Bomber Command). The 16 BEAR at Engels Airfield were probably from Dolon Airfield from which both BEAR regiments were missing on the same date. 25X1 25X1

BISON Aircraft Activity

167. (TSR) No further indication of BISON disassembly was noted at Engels Airfield, Ramenskoye FTC, or at Ukraina Airfield.

168. (TSR) At Engels Airfield (Northwest Bomber Command), the heavy bomber regiments were seen in normal strength throughout this reporting period. Eight BISON A, eight BISON B without refueling probe, 16 BISON B with refueling prob, and three BISON C are usually seen here. On imagery of [redacted] six BEAR A/B/C were observed, and on [redacted] 16 BEAR A/B/C were seen. BEAR are not usually seen at this LRA base. 25X1 25X1

169. (TSR) The BISON heavy bomber regiments at Ukraina Airfield (Far East Bomber Command) were seen at normal strengths during this reporting period. Four BISON A, eight BISON B without probe, 16 BISON B with probe, and four BISON C are usually seen here. On imagery of [redacted] two BEAR A/B/C were seen here. BEAR are not usually seen at this LRA base. 25X1

170. (TSR) The normal counts of BISON were observed in the flightline and maintenance areas at Ryazan/ Dyagilevo Airfield during this reporting period.

171. (TSR) Ten BISON B with refueling probes were seen at Dolon Airfield, a LRA BEAR base, on [redacted] Normally, from two to four BISON A or BISON B without refueling probe are seen here. 25X1 25X1

172. (TSR) Probable BISON tankers were at Mozdok Airfield, an LRA BEAR base, where two BISON A or BISON B without refueling probe were observed throughout the reporting period.

173. (TSR) One BISON B without refueling probe and one BISON B with probe were at Khorol Airfield East from [redacted] BISON are not usually seen at this naval aviation BEAR base. 25X1

174. (TSR) At Ramenskoye FTC, three BISON B with refueling probe and one BISON C were observed throughout this period.

INSTALLATION/FACILITY	DATE			COVER		BACKFIRE				BEAR									BISON					REMARKS
	DAY	MONTH	YEAR	COMPLETE	PARTIAL	A	B	B W/PROBE	B MODIFIED	UNDETERMINED	TOTAL	A	B	C	C MODIFIED	D	E	F	UNDETERMINED	TOTAL	A	B W/O PROBE	B W/PROBE	C	UNDETERMINED	TOTAL	
Kazan Airframe Plant Gorbunov 22				X			8	6			14																
					X		3				3																Heavy cloud cover
				X			6	6			12																
					X		7	4		1	12																Poor-quality imagery
					X		10	3			13																Poor-quality imagery
				X			8	6			14																
					X		9	4			13																Poor-quality imagery
					X		1				1																Heavy cloud cover
							8	7			15																New high count of Mod B

25X1

25X1

25X1

INSTALLATION/FACILITY	DATE			COVER		BACKFIRE						BEAR									BISON				REMARKS
	DAY	MONTH	YEAR	COMPLETE	PARTIAL	A	B	B W/PROBE	B MODIFIED	UNDETERMINED	TOTAL	A	B	C	C MODIFIED	D	E	F	UNDETERMINED	TOTAL	A	B W/O PROBE	B W/PROBE	C	UNDETERMINED	TOTAL	
Akhtubinsk Flight Test Center				X			4		2		6			1	1			1		3							BEAR F Variant
				X			4	1	2		7			1	1			1		3							BEAR F Variant
				X			4	1	2		7			1	1			1		3							BEAR F Variant
				X			4	1	2		7			1		1		1		3							BEAR F Variant; 1st BEAR D since 1971
				X			4	1	2		7			1		1		1		3							BEAR F Variant
				X					2	4	6			1		1		1		3							BEAR F Variant
				X			3	1	1		5			1		1		1		3							BEAR F Variant
				X			2	1	1		4			1		1		1		3							BEAR F Variant
					X		4		2		6			1		1		1		3							BEAR F Variant
					X		3		2		5			1		1		1		3							BEAR F Variant
					X		3		2		5			1	1	1				3							
				X			4	1	2		7			1	1	1		1		4							BEAR F Variant
					X		4	1	2		7			1				1		2							BEAR F Variant
				X			4	1	2		7			1	1	1		1		4							BEAR F Variant

INSTALLATION/FACILITY	DATE			COVER		BACKFIRE									BEAR							BISON			REMARKS
	DAY	MONTH	YEAR	COMPLETE	PARTIAL	A	B	B W/PROBE	B MODIFIED	UNDETERMINED	TOTAL	A	B	C	C MODIFIED	D	E	F	UNDETERMINED	TOTAL	A	B W/O PROBE	B W/PROBE	C	UNDETERMINED	TOTAL	
Ramenskoye Flight Test Center					X			4			4	1						4		5			3	1		4	1 BACKFIRE with [redacted] airframe, 1 partially disassembled BISON B, 1 BEAR A with tail extension
					X			5			5	1						4		5			3	1		4	1 BACKFIRE with [redacted] airframe part disassembled BISON.
					X			1			1							2		2			3	1		4	[redacted] airframe gone
					X			4	1		5	1						5		6			3	1		4	[redacted] airframe gone
					X			4	1		5							2		2			1	1		2	[redacted] airframe gone
					X			4	1		5	1						5		6			3	1		4	[redacted] airframe gone
					X			3	1		4	1						3		4			3	1		4	[redacted] airframe gone
					X			4	1		5	1						4		5			3	1		4	[redacted] airframe gone
				X				4	1		5	1						3		4			3	1		4	[redacted] airframe gone
					X			4	1		5	1						4		5			2	1		3	[redacted] airframe gone
					X			4	1		5	1						4		5			2	1		3	[redacted] airframe gone

25X1

25X1

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Top Secret

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INSTALLATION/FACILITY	DATE			COVER		BACKFIRE				BEAR									BISON				REMARKS
	DAY	MONTH	YEAR	COMPLETE	PARTIAL	A	B	B W/PROBE	B MODIFIED	UNDETERMINED	TOTAL	A	B	C	C MODIFIED	D	E	F	UNDETERMINED	TOTAL	A	B W/O PROBE	B W/PROBE	C	UNDETERMINED	TOTAL	
Belaya Airfield					X		0				0																Haze
				X			16				16																
					X		0				0																1 undergoing starboard engine change
				X			16				16																Heavy clouds
				X			16				16																
					X		16				16																
				X			16				16																
					X		3				3																Flight activity noted
					X		8				8																Heavy clouds
					X		11				11																Heavy clouds
				X			16				16																Scattered clouds
				X			16				16																
				X			15				15																
				X			16				16																
				X			16				16																
				X			16				16																
				X			20				20																New high count of backfire
					X		20				20																Heavy clouds
					X		5				5																
				X			19				19																

25X1

25X1

INSTALLATION/FACILITY	DATE			COVER		BACKFIRE										BEAR										BISON				REMARKS
	DAY	MONTH	YEAR	COMPLETE	PARTIAL	A	B	B W/PROBE	B MODIFIED	UNDETERMINED	TOTAL	A	B	C	C MODIFIED	D	E	F	UNDETERMINED	TOTAL	A	B W/O PROBE	B W/PROBE	C	UNDETERMINED	TOTAL	
Belaya Airfield				X			20				20																	
				X			20				20																	
				X			20				20																	
				X			20				20																	
					X		20				20																	
					X		16				16																	
				X			20				20																	At least 1 with possible missile
					X		2				2																	Heavy clouds
				X			15				15																	One with AS-4 under left wing
					X		9				9																	
				X			15				15																	
				X			15				15																	
				X			15				15																	
				X			15				15																	
				X			20				20																	
				X			20				20																	
				X			20				20																	
					X		12				12																	
				X			20				20																	
					X		10				10																	

25X1

INSTALLATION/FACILITY	DATE			COVER		BACKFIRE						BEAR									BISON				REMARKS
	DAY	MONTH	YEAR	COMPLETE	PARTIAL	A	B	B W/PROBE	B MODIFIED	UNDETERMINED	TOTAL	A	B	C	C MODIFIED	D	E	F	UNDETERMINED	TOTAL	A	B W/O PROBE	B W/PROBE	C	UNDETERMINED	TOTAL	
Belaya Airfield				X			20				20																
				X			20				20																
				X			20				20																
					X		4				4																
					X		20				20																
				X			20				20																
				X			20				20																
					X		20				20																
				X			20				20																
				X			20				20																

Top Secret

Top Secret RUFF

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INSTALLATION/FACILITY	DATE			COVER		BACKFIRE				BEAR								BISON				REMARKS
	DAY	MONTH	YEAR	COMPLETE	PARTIAL	A	B	B W/PROBE	B MODIFIED	UNDETERMINED	TOTAL	A	B	C	C MODIFIED	D	E	F	UNDETERMINED	TOTAL	A	B W/O PROBE	B W/PROBE	C	UNDETERMINED	TOTAL	
Poltava Airfield					X		0				0																Scattered clouds
					X		2				2																Scattered clouds
					X		2				2																Scattered clouds
					X		18				18																
					X		17				17																
					X		17				17																
					X		15				15																
				X			22				22																New high count of BACKFIRE
					X		21				21																
				X			22				22																
				X			22				22																
					X		22				22																1 AS-4 on dolly near BACKFIRE
					X		18				18																
				X			18				18																
					X		15				15																
					X		18				18																
				X			19				19																
					X		16				16																3 BACKFIRE B with 1 AS-4 mounted under left wing
					X		5				5																Scattered clouds
				X			19				19																

25X1

25X1

25X1

INSTALLATION/FACILITY	DATE			COVER		BACKFIRE					BEAR								BISON				REMARKS
	DAY	MONTH	YEAR	COMPLETE	PARTIAL	A	B	B W/PROBE	B MODIFIED	UNDETERMINED	TOTAL	A	B	C	C MODIFIED	D	E	F	UNDETERMINED	TOTAL	A	B W/O PROBE	B W/PROBE	C	UNDETERMINED	TOTAL	
			19	X							19																

25X1

INSTALLATION/FACILITY	DATE DAY	DATE MONTH	DATE YEAR	COVER COMPLETE	COVER PARTIAL	BACKFIRE A	BACKFIRE B	BACKFIRE B W/PROBE	BACKFIRE B MODIFIED	BACKFIRE UNDETERMINED	BACKFIRE TOTAL	BEAR A	BEAR B	BEAR C	BEAR C MODIFIED	BEAR D	BEAR E	BEAR F	BEAR UNDETERMINED	BEAR TOTAL	BISON A	BISON B W/O PROBE	BISON B W/PROBE	BISON C	BISON UNDETERMINED	BISON TOTAL	REMARKS
Soltsy Airfield				X			19				19																1 with prob AS-4 under right wing
				X			20				20																4 AS-4 on dollies in ASM support facility
				X			20				20																11 AS-4 on dollies in the ASM support facility
				X			20				20																
				X			20				20																3 BACKFIRE B with an AS-4 under each wing
				X			20				20																
				X			20				20																
				X			20				20																
					X		17				17																
					X		18				18																
					X		14				14																
					X		19				19																
					X		1				1																Heavy clouds
					X		5				5																Heavy clouds
					X		11				11																Heavy clouds
					X		9				9																Heavy clouds
				X			19				19																
					X		0				0																Heavy clouds
					X		18				18																
				X			20				20																

25X1

INSTALLATION/FACILITY	DATE DAY	DATE MONTH	DATE YEAR	COVER COMPLETE	COVER PARTIAL	BACKFIRE A	BACKFIRE B	BACKFIRE B W/PROBE	BACKFIRE B MODIFIED	BACKFIRE UNDETERMINED	BACKFIRE TOTAL	BEAR A	BEAR B	BEAR C	BEAR C MODIFIED	BEAR D	BEAR E	BEAR F	BEAR UNDETERMINED	BEAR TOTAL	BISON A	BISON B W/O PROBE	BISON B W/PROBE	BISON C	BISON UNDETERMINED	BISON TOTAL	REMARKS
Soltsy Airfield				X			20				20																
					X		19				19																
				X			18				18																
					X		15				15																
					X		4				4																Heavy clouds
					X		17				17																
					X		14				14																1 AS-4 dolly near BACKFIRE in NE dispersal area
				X			20				20																
				X			20				20																

INSTALLATION/FACILITY	DATE			COVER		BACKFIRE												BEAR												BISON			REMARKS
	DAY	MONTH	YEAR	COMPLETE	PARTIAL	A	B	B W/PROBE	B MODIFIED	UNDETERMINED	TOTAL	A	B	C	C MODIFIED	D	E	F	UNDETERMINED	TOTAL	A	B W/O PROBE	B W/PROBE	C	UNDETERMINED	TOTAL							
Ryazan/Dyagilevo Airfield				X		3	6				9										1				1B 3B Fus	5							
				X		3	5			2	10										1	1			3B Fus	5							
					X						0																0						Areas not imaged
					X	1	1				2											1			3B Fus	4						Scattered clouds
					X	3	5				8															0						BISON repair facility cloud covered
					X						0															0						Heavy clouds
					X						0															0						Heavy clouds
				X		3	3				6												1		1 undet 3 B/C Fus	5						
				X		3	3				6														1 Undet 3 Fus	4						
				X		3	2			1	6												1		1 B/C 3 Fus	5						
				X		3	3				6												2		3 Fus	5						
					X	3	3				6														2 Undet 3 Fus	5						
					X	2	3			1	6												2		3 Fus	5						
				X		2				4	6												2		3 Fus	5						
					X	3	3				6												2		1 Fus	3						
					X		2				2															0						Heavy clouds
					X	3	3				6												2			2						Scattered clouds
				X		1	1			4	6												1		2 Fus	3						

25X1

25X1

25X1

INSTALLATION/FACILITY	DATE			COVER		BACKFIRE				BEAR									BISON				REMARKS
	DAY	MONTH	YEAR	COMPLETE	PARTIAL	A	B	B W/PROBE	B MODIFIED	UNDETERMINED	TOTAL	A	B	C	C MODIFIED	D	E	F	UNDETERMINED	TOTAL	A	B W/O PROBE	B W/PROBE	C	UNDETERMINED	TOTAL	
Bykhov Airfield					X		32				32																
				X			36				36																
					X		15				15																
				X			36				36																
					X		9				9																
					X		16				16																Scattered clouds
				X			36				36																Scattered clouds
					X		23				23																
					X		33				33																
					X		27				27																
					X		30				30																
					X		23				23																
				X			35				35																1 AS-4 near a BACKFIRE
					X		28				28																
				X			34				34																
					X		2				2																Heavy clouds
					X		18				18																
					X		21				21																

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INSTALLATION/FACILITY	DATE			COVER		BACKFIRE												BEAR												BISON						REMARKS
	DAY	MONTH	YEAR	COMPLETE	PARTIAL	A	B	B W/PROBE	B MODIFIED	UNDETERMINED	TOTAL	A	B	C	C MODIFIED	D	E	F	UNDETERMINED	TOTAL	A	B W/O PROBE	B W/PROBE	C	UNDETERMINED	TOTAL									
Oktyabrskoye Airfield					X		16				16																								
					X		17				17																								
					X		13				13																								Refueling activity observed
					X		17				17																								
					X		15				15																								
				X			17				17																								
					X		9				9																								
				X			17				17																								
					X		9				9																								
				X			17				17																								2 coverages-1 is
				X			17				17																								
				X			17				17																								
					X		16				16																								
				X			17				17																								
					X		16				16																								
				X			16				16																								
				X			17				17																								Two coverages-1 is AS-4 observed
				X			17				17																								
				X			17				17																								
				X			17				17																								

25X1

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INSTALLATION/FACILITY	DATE			COVER		BACKFIRE				BEAR									BISON				REMARKS
	DAY	MONTH	YEAR	COMPLETE	PARTIAL	A	B	B W/PROBE	B MODIFIED	UNDETERMINED	TOTAL	A	B	C	C MODIFIED	D	E	F	UNDETERMINED	TOTAL	A	B W/O PROBE	B W/PROBE	C	UNDETERMINED	TOTAL	
Oktyabroskoye Airfield				X			17				17																
				X			17				17																
					X		7				7																Heavy clouds
				X			17				17																
					X		12				12																Scattered clouds
					X		16				16																
					X		7				7																Heavy clouds
					X		0				0																Heavy clouds
					X		17				17																
					X		14				14																
					X		10				10																
				X			17				17																
					X		16				16																
				X			17				17																
					X		17				17																1 AS-4 in ASM support facility
				X			16				16																
					X		10				10																Scattered clouds
					X		17				17																
				X			17				17																
					X		13				13																3 AS-4 in ASM support facility

25X1

25X1

INSTALLATION/FACILITY	DATE			COVER		BACKFIRE				BEAR								BISON				REMARKS
	DAY	MONTH	YEAR	COMPLETE	PARTIAL	A	B	B W/PROBE	B MODIFIED	UNDETERMINED	TOTAL	A	B	C	C MODIFIED	D	E	F	UNDETERMINED	TOTAL	A	B W/O PROBE	B W/PROBE	C	UNDETERMINED	TOTAL	
Oktyabrskoye Airfield				X			15				15																25X1
				X			17				17																At least 4 BACKFIRE B were armed with wing-mounted AS-4s
				X			17				17																No BACKFIRE observed with missiles

INSTALLATION/FACILITY	DATE			COVER		BACKFIRE									BEAR									BISON					REMARKS
	DAY	MONTH	YEAR	COMPLETE	PARTIAL	A	B	B W/PROBE	B MODIFIED	UNDETERMINED	TOTAL	A	B	C	C MODIFIED	D	E	F	UNDETERMINED	TOTAL	A	B W/O PROBE	B W/PROBE	C	UNDETERMINED	TOTAL	
Nikolayev/Kulbakino Airfield					X		5				5					2		1		3								
					X						0								2 D/F	2							Heavy clouds
					X		1				1					2		1	1 D/F	4								
					X		5				5					1			1 D/F	2								
					X		2				2								6 D/F	6								
				X			8				8					5		4		9								
					X		7				7					2		1		3								
					X		2				2					1			7 D/F	8								
					X		6				6								3 D/F	3								
				X			7				7					6		4		10								
				X			7				7					6		4		10								
					X		7				7					6		4		10								
				X			8				8								10 D/F	10								
				X			8				8					5		4	1 D/F	10								
					X		7				7					2		1		3								
					X		8				8					5		2	3 D/F	10								
				X			8				8					5		3	3 D/F	11								
				X			7				7					6		5		11								BACKFIRE B in repair depot was not observed
					X		7				7					2		2		4								Scattered clouds
					X		5				5							4		4								Heavy clouds

INSTALLATION/FACILITY	DATE			COVER		BACKFIRE								BEAR								BISON			REMARKS
	DAY	MONTH	YEAR	COMPLETE	PARTIAL	A	B	B W/PROBE	B MODIFIED	UNDETERMINED	TOTAL	A	B	C	C MODIFIED	D	E	F	UNDETERMINED	TOTAL	A	B W/O PROBE	B W/PROBE	C	UNDETERMINED	TOTAL	
Nikolayev/Kulbakino Airfield					X		9				9					6		5		11							* 1 BEAR D has a tail extension
				X			8				8					5		5		10							* 1 BEAR D has a tail extension
					X		9			1 prob	10								10 D/F	10							
					X		7									4		4	1 D/F	9							
				X			10				10					5		5		10							
				X			10				10					5		5		10							
				X			8				8					3		5	1 D/E	9							
				X			12				12								10 D/F	10							New high count of BACKFIRE
				X			12				12					4		5	1 D/E	10							
				X			12				12					4		4	2 D/F	10							
					X		12				12					4		5	1 D/E	10							
					X						2					5		4		9							
				X			12				12								10 D/F	10							
					X		11				11					4		5	1 D/E	10							
					X		7				7					3		5	1 undet	9							
				X			10				10					5		5		10							
				X			12				12					4		4	1 D/F 1 D/F	10							
					X		3				3					2		2		4							Heavy clouds
					X		2				2									0							Scattered clouds
					X		5				5					4		5	1 D/F	10							BACKFIRE B in rpr depot was not observed 1 BEAR D has a tail extension

25X1

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Top Secret RUFF

Top Secret

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INSTALLATION/FACILITY	DATE			COVER		BACKFIRE								BEAR								BISON				REMARKS
	DAY	MONTH	YEAR	COMPLETE	PARTIAL	A	B	B W/PROBE	B MODIFIED	UNDETERMINED	TOTAL	A	B	C	C MODIFIED	D	E	F	UNDETERMINED	TOTAL	A	B W/O PROBE	B W/PROBE	C	UNDETERMINED	TOTAL	
Nikolayev/Kulbakino Airfield				X			11				11								10 D/E/F	10							BACKFIRE B in the repair depot was not observed

25X1

25X1

INSTALLATION/FACILITY	DATE			COVER		BACKFIRE									BEAR						BISON				REMARKS
	DAY	MONTH	YEAR	COMPLETE	PARTIAL	A	B	B W/PROBE	B MODIFIED	UNDETERMINED	TOTAL	A	B	C	C MODIFIED	D	E	F	UNDETERMINED	TOTAL	A	B W/O PROBE	B W/PROBE	C	UNDETERMINED	TOTAL	
Taganrog Airframe Plant Dimitrov 86					X													5		5						Variant	25X1
					X													5		5						Variant	
				X														4		4						Variant	
				X														4		4						Variant	
				X														5		5						Variant	

[redacted]

25X1

INSTALLATION/FACILITY	DATE			COVER		BACKFIRE						BEAR									BISON						REMARKS
	DAY	MONTH	YEAR	COMPLETE	PARTIAL	A	B	B W/PROBE	B MODIFIED	UNDETERMINED	TOTAL	A	B	C	C MODIFIED	D	E	F	UNDETERMINED	TOTAL	A	B W/O PROBE	B W/PROBE	C	UNDETERMINED	TOTAL	
Kuybyshev Airframe Plant Lenin 18	[redacted]	[redacted]	[redacted]	X											1			1		2							
	[redacted]	[redacted]	[redacted]	X											1			1		2							
	[redacted]	[redacted]	[redacted]																	0							Cloud covered
	[redacted]	[redacted]	[redacted]	X											1			1		2							
	[redacted]	[redacted]	[redacted]		X										1					1							Heavy clouds
	[redacted]	[redacted]	[redacted]	X											1			1		2							
	[redacted]	[redacted]	[redacted]		X										1					1							Heavy clouds
	[redacted]	[redacted]	[redacted]	X											1			1		2							
	[redacted]	[redacted]	[redacted]		X										1					1							Heavy clouds
	[redacted]	[redacted]	[redacted]	X											1			1		2							
	[redacted]	[redacted]	[redacted]		X										1					1							Heavy clouds
	[redacted]	[redacted]	[redacted]		X													1		1							Heavy clouds
	[redacted]	[redacted]	[redacted]	X											1			1		2							
	[redacted]	[redacted]	[redacted]	X											1			1		2							

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INSTALLATION/FACILITY	DATE DAY	DATE MONTH	DATE YEAR	COVER COMPLETE	COVER PARTIAL	BACKFIRE A	BACKFIRE B	BACKFIRE B W/PROBE	BACKFIRE B MODIFIED	BACKFIRE UNDETERMINED	BACKFIRE TOTAL	BEAR A	BEAR B	BEAR C	BEAR C MODIFIED	BEAR D	BEAR E	BEAR F	BEAR UNDETERMINED	BEAR TOTAL	BISON A	BISON B W/O PROBE	BISON B W/PROBE	BISON C	BISON UNDETERMINED	BISON TOTAL	REMARKS
Dolon Airfield					X						16	14	2				1			33		2				2	Scattered clouds
					X														27	27					1	1	Heavy clouds
					X						13	4	1				2		3 B/C	23		2				2	Scattered clouds
					X						5& 3 prob	3					2		2 B/C	15					1	1	Scattered clouds
				X							15	12	6				2			35		2				2	
				X							15		2				2		16 B/C	35						0	
				X							15	13	4& 2 prob				2 prob			36						0	
				X							15	12	7				2			36	4					4	
				X							15	12	7				2			36	4					4	
				X							1		1							2	4					4	BEAR regiments participating in exercise
					X						10b 7 prob								19 B/C	36					4	4	Heavy clouds
				X															37	37	4					4	
				X							14	12	7				2			35	1					1	
					X						10	3	1				2		3	19						0	Heavy clouds
				X															34	34					1	1	
					X						11	10	7							28	1					1	Scattered clouds
				X							14		5				2		12 B/C	33	1					1	
					X						14	10	3				2			29	1					1	Scattered clouds
				X							13	14	4				2			33	1					1	
				X							13	12	6				2			33	1					1	

INSTALLATION/FACILITY	DATE			COVER		BACKFIRE										BEAR						BISON				REMARKS
	DAY	MONTH	YEAR	COMPLETE	PARTIAL	A	B	B W/PROBE	B MODIFIED	UNDETERMINED	TOTAL	A	B	C	C MODIFIED	D	E	F	UNDETERMINED	TOTAL	A	B W/O PROBE	B W/PROBE	C	UNDETERMINED	TOTAL	
Dolon Airfield					X						14	10	6			2				32							Scattered clouds
					X						14	12	6			2				34						0	Scattered clouds
				X							15	12	7			2				36			10			10	Normally, 1 or 2 BISON seen here
				X							14	14	5			2				35						0	
				X							14	13	6			2		1 C/E		36						0	
					X								3					7 B/C		10						0	Heavy clouds
					X						14	12	7			2				35						0	Scattered clouds
					X						2	8	2							12					2	2	Heavy clouds
					X						14	13	6			2				35	2					2	Scattered clouds
					X						14	3				2		9		28	2					2	Heavy clouds
					X															0						0	Heavy clouds over aircraft parking areas
				X							15	11	6			2				34	2					2	
					X						15	3				2		7 B/C		27	2					2	Heavy clouds over BEAR B/C parking area
				X							15	13	5			2				35	2					2	
					X						7	13	3			2				25					1	1	ASM exercise in progress
					X						15					2		6 prob B/C		23	2					2	Heavy clouds
				X							15	13	6			2				36	2					2	
					X						15					1		10 prob B/C		26	2					2	Heavy clouds
					X															0						0	Heavy clouds over BEAR parking areas

INSTALLATION/FACILITY	DATE			COVER		BACKFIRE									BEAR							BISON				REMARKS
	DAY	MONTH	YEAR	COMPLETE	PARTIAL	A	B	B W/PROBE	B MODIFIED	UNDETERMINED	TOTAL	A	B	C	C MODIFIED	D	E	F	UNDETERMINED	TOTAL	A	B W/O PROBE	B W/PROBE	C	UNDETERMINED	TOTAL	
Dolon Airfield					x								7	4				3		14						0	BEAR A & E parking areas was cloud covered
				x								15	13	5			2									0	
				x								15	12	6			2			35						0	
					x							4	5	4				6		19						0	Heavy clouds
					x							5	13	5						23						0	Heavy clouds
				x								16	13	5			2			36		2				2	
				x								15	11	5			2			33		2				2	

25X1

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INSTALLATION/FACILITY	DATE			COVER		BACKFIRE											BEAR						BISON			REMARKS
	DAY	MONTH	YEAR	COMPLETE	PARTIAL	A	B	B W/PROBE	B MODIFIED	UNDETERMINED	TOTAL	A	B	C	C MODIFIED	D	E	F	UNDETERMINED	TOTAL	A	B W/O PROBE	B W/PROBE	C	UNDETERMINED	TOTAL	
Mozdok Airfield					X								10	4						14	2					2	Partial coverage
				X									6	6						12					2 ABC	2	
					X								14	6						20		2				2	Partial coverage
				X									23	4						27		2				2	
				X															20 B/C	20		2				2	
				X									13	6						19		2				2	
				X									12	6					1 B/C	19		2				2	
				X									12	7						19		2				2	
				X									12	6						18		2				2	
				X									14	3						17		2				2	
				X									13	4						17		2				2	
				X									12	7						19		2				2	
					X								12	6						18		2				2	Heavy clouds
				X									11	3					4 B/C	18		2				2	
				X									12	6					2 B/C	20		2				2	
				X									12	6						18		2				2	
				X									14	6						20		2				2	
					X								9	7						16	2					2	ASM exercise in progress
					X															0						0	Heavy clouds
				X										1					18 B/C	19		2				2	

INSTALLATION/FACILITY	DATE			COVER		BACKFIRE						BEAR									BISON				REMARKS
	DAY	MONTH	YEAR	COMPLETE	PARTIAL	A	B	B W/PROBE	B MODIFIED	UNDETERMINED	TOTAL	A	B	C	C MODIFIED	D	E	F	UNDETERMINED	TOTAL	A	B W/O PROBE	B W/PROBE	C	UNDETERMINED	TOTAL	
Mozdok Airfield				X									13	6						19					2	2	

25X1

25X1

INSTALLATION/FACILITY	DATE			COVER		BACKFIRE									BEAR										BISON				REMARKS
	DAY	MONTH	YEAR	COMPLETE	PARTIAL	A	B	B W/PROBE	B MODIFIED	UNDETERMINED	TOTAL	A	B	C	C MODIFIED	D	E	F	UNDETERMINED	TOTAL	A	B W/O PROBE	B W/PROBE	C	UNDETERMINED	TOTAL	
Uzin/Chepelevka Airfield				X								13	12	6	1		2		1 A/Mod	35							
					X									3 prob			1 prob		16 B/C	20							Heavy clouds
				X								15	2		1				19 ABC	37							Haze
				X								13	12	7	2				1 A/B 1 A/Mod	36							
				X								15	15	4			2			36							ASM exercise in progress
				X								15	15	5			2			37							
				X										5			2		29 ABC	36							
					X														29 ABC	29							Heavy clouds
					X							3	13	5			1		1 A/Mod 5 ABC	28							Scattered clouds and partial coverage
					X								11						6 A/B 5 ABC	22							Heavy clouds
					X								9						14 A/B	23							Scattered clouds
				X								17	10	4			1			32							
					X							14								14							Heavy clouds

INSTALLATION/FACILITY	DATE			COVER		BACKFIRE										BEAR						BISON			REMARKS
	DAY	MONTH	YEAR	COMPLETE	PARTIAL	A	B	B W/PROBE	B MODIFIED	UNDETERMINED	TOTAL	A	B	C	C MODIFIED	D	E	F	UNDETERMINED	TOTAL	A	B W/O PROBE	B W/PROBE	C	UNDETERMINED	TOTAL	
Belaya Tserkov Airfield					X														5 ABC								Repair base cloud covered; scattered clouds over airfield
					X														5 ABC								Scattered clouds
				X															9 ABC								
				X															8 ABC								1 at aircraft repair base

25X1

25X1

25X1

INSTALLATION/FACILITY	DATE			COVER		BACKFIRE										BEAR						BISON				REMARKS
	DAY	MONTH	YEAR	COMPLETE	PARTIAL	A	B	B W/PROBE	B MODIFIED	UNDETERMINED	TOTAL	A	B	C	C MODIFIED	D	E	F	UNDETERMINED	TOTAL	A	B W/O PROBE	B W/PROBE	C	UNDETERMINED	TOTAL	
Alekseyevka Airfield				X														7		7							
				X														5		5							
					X													5		5							Partial coverage; 20% of airfield off frame
					X													5		5							Partial coverage; 20% of airfield off frame
					X													5		5							Partial coverage; 10% of airfield off frame
				X														5		5							
				X														5		5							
					X													6		6							Partial coverage; 30% of airfield off frame
					X													0		0							Partial coverage; 85% of airfield off frame
				X														6		6							
					X													5		5							Partial coverage; 5% of airfield off frame
				X														5		5							
					X													5		5							Partial coverage; 5% of airfield off frame
					X													4		4							Heavy clouds
					X													6		6							Partial coverage; 5% of airfield off frame
				X														6		6							
					X													6		6							Partial coverage; 5% of airfield off frame
					X													14		14							Scattered clouds and haze
					X													14		14							Partial coverage; 15% of airfield off frame
				X														8		8							

INSTALLATION/FACILITY	DATE			COVER		BACKFIRE										BEAR			BISON						REMARKS
	DAY	MONTH	YEAR	COMPLETE	PARTIAL	A	B	B W/PROBE	B MODIFIED	UNDETERMINED	TOTAL	A	B	C	C MODIFIED	D	E	F	UNDETERMINED	TOTAL	A	B W/O PROBE	B W/PROBE	C	UNDETERMINED	TOTAL	
Alekseyevka Airfield				X														12		12							
				X														14		14							
				X														13		13							
				X														12		12							
					X													0		0							Partial coverage; no AOB observed in imaged area
					X													1 prob		1							Heavy clouds
				X														11		11							High count of 35 AS-4 shipping containers
				X														15		15							
				X														14		14							
				X														12		12							
				X														18 prob		18							High count of BEAR for the period
				X														18 prob		18							High count of BEAR for the period
					X													6		6							Heavy clouds
					X													12		12							Scattered clouds
					X													3 6 prob		9							Heavy clouds

25X1

INSTALLATION/FACILITY	DATE			COVER		BACKFIRE									BEAR								BISON			REMARKS
	DAY	MONTH	YEAR	COMPLETE	PARTIAL	A	B	B W/PROBE	B MODIFIED	UNDETERMINED	TOTAL	A	B	C	C MODIFIED	D	E	F	UNDETERMINED	TOTAL	A	B W/O PROBE	B W/PROBE	C	UNDETERMINED	TOTAL	
Khorol Airfield East				X												18		7		25		1	1			2	
				X												11 2 prob		9		22		1				1	
				X												18		9 prob		27		1	1				
				X												18		9		27		1	1			2	
					X											18		9		27		1	1			2	Partial coverage; 5% off frame
					X											8 5 prob		9	4 D/F 27 D/F	26		1			1B	1	Scattered clouds and haze Haze; poor interpretability
				X												13 3 prob		9	2 D/F	27		1				1	
					X											14		6	1 D/F	21		1	1			2	Scattered clouds and cloud shadow
					X											17		3	4 D/F	24							Scattered clouds
				X												18		9		27							
				X												18		6		24							
					X											7			9 D/F	16							Scattered clouds
				X												18				18							
					X											17				17							Partial coverage; 5% off frame
					X											15		3		18							Scattered clouds
				X												15				15							
				X												17				17							
				X												18				18							
					X											17				17							Scattered clouds and cloud shadow

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INSTALLATION/FACILITY	DATE			COVER		BACKFIRE							BEAR									BISON				REMARKS
	DAY	MONTH	YEAR	COMPLETE	PARTIAL	A	B	B W/PROBE	B MODIFIED	UNDETERMINED	TOTAL	A	B	C	C MODIFIED	D	E	F	UNDETERMINED	TOTAL	A	B W/O PROBE	B W/PROBE	C	UNDETERMINED	TOTAL	
Khorol Airfield East					X											17				17							Scattered clouds and haze
				X												18				18							
				X												18				18							

25X1

25X1

INSTALLATION/FACILITY	DATE			COVER		BACKFIRE										BEAR				BISON					REMARKS
	DAY	MONTH	YEAR	COMPLETE	PARTIAL	A	B	B W/PROBE	B MODIFIED	UNDETERMINED	TOTAL	A	B	C	C MODIFIED	D	E	F	UNDETERMINED	TOTAL	A	B W/O PROBE	B W/PROBE	C	UNDETERMINED	TOTAL	
Kipelovo Airfield					X											19		20		39							Scattered clouds
				X												20		23		43							
				X												24		20		44							
					X											10		22		32							Scattered clouds
					X														37 D/F	37						Scattered clouds
					X														46 D/F	46						Scattered clouds
				X												19		23	3 D/F	45						
					X											14		25		39							Scattered clouds
					X														44 D/F	44						Scattered clouds
					X											12		23	4 D/F	39						Scattered clouds
					X											19		24		43							Scattered clouds
					X											9		20	5 D/F	34						Scattered clouds
					X											8				8							Heavy clouds
					X											21		23		44							Scattered clouds
				X												21		22		43							
				X												22		24		46							
				X												24		18		42							
					X														5 prob D	5						Heavy clouds
				X												23		12		35							
					X		1				1					16		18		34							Scattered clouds; first sightings of BACKFIRE here

25X1

INSTALLATION/FACILITY	DATE			COVER		BACKFIRE								BEAR								BISON				REMARKS
	DAY	MONTH	YEAR	COMPLETE	PARTIAL	A	B	B W/PROBE	B MODIFIED	UNDETERMINED	TOTAL	A	B	C	C MODIFIED	D	E	F	UNDETERMINED	TOTAL	A	B W/O PROBE	B W/PROBE	C	UNDETERMINED	TOTAL	
Kipelovo Airfield				X			1				1					24		17		41							Scattered clouds
				X			1				1					14		25		39							Scattered clouds

25X1

25X1

INSTALLATION/FACILITY	DATE			COVER		BACKFIRE										BEAR				BISON				REMARKS
	DAY	MONTH	YEAR	COMPLETE	PARTIAL	A	B	B W/PROBE	B MODIFIED	UNDETERMINED	TOTAL	A	B	C	C MODIFIED	D	E	F	UNDETERMINED	TOTAL	A	B W/O PROBE	B W/PROBE	C	UNDETERMINED	TOTAL	
Engels Airfield					x							6								6	8	7	15	3	2B	35	
			x																	9	7	19	3		38	
			x																	9 A/B, 5 C/E, 2	16	4	4	12	2	12	34	
			x																		8	2	19	3	3B	35	
				x																	6		1	2	10 A/B 16B	35	
			x																		4	3	18	3	8 A/B	36	
			x																		8	9	15	3	1 A/C	36	
			x																		9	5	19	3		36	
			x																		9	5	16	3	5B	38	
			x																		7		8	3	17B	35	
			x																		9	6	19	3		37	
			x																		7		14	3	12B	36	
				x																	7		18	3	8B	36	
				x																	7		3	3	23B	36	
			x																		8		5	3	17B, 3	36	
				x																	1		10		3	14	Heavy clouds
				x																	9		10	3	12B	34	
				x																	7	5	12	3		27	Haze & partial coverage

INSTALLATION/FACILITY	DATE			COVER		BACKFIRE						BEAR								BISON					REMARKS
	DAY	MONTH	YEAR	COMPLETE	PARTIAL	A	B	B W/PROBE	B MODIFIED	UNDETERMINED	TOTAL	A	B	C	C MODIFIED	D	E	F	UNDETERMINED	TOTAL	A	B W/O PROBE	B W/PROBE	C	UNDETERMINED	TOTAL	
Ukraina Airfield				x																	4	2	14	2	4B, 5	31	
				x																	4	2	9	1	7B, 8	31	
				x																	7	4	13	4	3B	31	
				x																	7	4	12	3	2B, 2	30	
				x																	3	6	13	2	7	31	
					x																5		7	4	8B, 8	32	
					x																4	6	10	2	8B	30	
				x																	5		11	4	14B	34	
				x																	7	4	17	4	1	33	
				x																		8	11	4	4B, 2	29	
				x																	3	4	17	4		28	
					x																1			3	2B, 21	27	Heavy clouds
				x																	3	4	18	4		29	
				x																	1	7	13	5	2 A/B	28	
					x																1		3		17B, 9	30	Heavy clouds
				x																	2	8	11	2	4B, 2	29	
					x																2	2	15	4		23	Partial coverage
					x																2	2	3		20	27	Scahered clouds
				x																	5	5	14	5	2B	31	
					x																4		8	3	14B	29	Scahered clouded

25X1

25X1

INSTALLATION/FACILITY	DATE			COVER		BACKFIRE										BEAR				BISON					REMARKS
	DAY	MONTH	YEAR	COMPLETE	PARTIAL	A	B	B W/PROBE	B MODIFIED	UNDETERMINED	TOTAL	A	B	C	C MODIFIED	D	E	F	UNDETERMINED	TOTAL	A	B W/O PROBE	B W/PROBE	C	UNDETERMINED	TOTAL	
Ukraina Airfield				X														2 ABC	2	6	13	11	3	1 B/C	34	
				X																7	6	14	5		32	
					X															6	1	2	4	1 A/C	14	Partial coverage
					X																			8	8	Heavy clouds
					X															2		3	3	19B, 2	29	
					X															6		14	5		25	Partial coverage
				X																4	14	6	2	5	31	
				X																4	8	16	4	1 BC, 1	34	
				X																5	10	12	3	1 A/C	31	
					X															4		14	3	1B	22	Partial coverage
				X																4	7	16	4	1	32	
				X																4	9	15	4	1 B/C	33	
				X																4	7	17	4	1	33	
				X																4	8	11	4	6	33	
					X															2		3		19B, 9	33	
				X																4		8	3	14B, 4	33	
				X																4		9	3	16B, 1 B/C	33	
				X																4		10	3	13B, 3	33	
				X																4	10	14	4		32	
				X																4	7	17	4		32	

INSTALLATION/FACILITY	DATE			COVER		BACKFIRE										BEAR								BISON					REMARKS
	DAY	MONTH	YEAR	COMPLETE	PARTIAL	A	B	B W/PROBE	B MODIFIED	UNDETERMINED	TOTAL	A	B	C	C MODIFIED	D	E	F	UNDETERMINED	TOTAL	A	B W/O PROBE	B W/PROBE	C	UNDETERMINED	TOTAL		
Ukraina Airfield				X																	4		9	4	15B	32		
				X																	4			4	24B	32	Haze	
				X																					10B	35	Haze	
																									25			
				X																	1	10	9	4	11	35		
					X																2	7	3		6	1B	Heavy clouds	
					X																2		2	3	5B	12	Heavy clouds	

25X1

25X1

ADV-2

SECTION 5

ADV-2

Introduction

175. (TSR) The ADV-2 is a ground-launched, air-breathing, aerodynamic cruise vehicle currently undergoing flight testing at Kapustin Yar Cruise Test Complex D, Site 1 (Figure 3). ADV-2-associated equipment has also been observed at Ramenskoye FTC and at Akhtubinsk FTC.

176. (TSR) The intended function of the ADV-2 is still unclear. This ground-launched vehicle could be used as a reconnaissance drone, an electronic counter-measures drone, or a cruise missile. However, an apparent correlation exists between the ground-launched ADV-2 and the airborne, [redacted] BACKFIRE-mounted, airframe observed at Ramenskoye and Akhtubinsk FTCs. This correlation suggests that ADV-2-related technology (or perhaps the ADV-2 itself) is being used in an air-launched cruise vehicle development program. 25X1

177. (TSR) Three versions of the ADV-2 have been identified at Kapustin Yar. All three have a [redacted] 25X1
[redacted] fuselage with a dorsal-mounted air intake, positioned forward of the main 25X1
wings, and a single vertical stabilizer. The three vehicles differ from each other primarily in the design and location of the various control/lifting surfaces.

178. (TSR) The ADV-2a, which was first imaged on [redacted] has aft-mounted clipped delta wings 25X1
and two sets of foreplanes which have sharply tapered leading and trailing edges with rounded tips.

[redacted] 25X1

179. (TSR) The ADV-2b was first observed on [redacted] and has aft-mounted clipped delta wings 25X1
and a single set of foreplanes that have straight leading and trailing edges and are squared off at the tips.

180. (TSR) The ADV-2c, which had been tentatively identified as the ADV-3 on [redacted] has a 25X1
single set of foreplanes similar in appearance to those of the ADV-2b; however, the wings of the ADV-2c are of a simple delta design and not the clipped delta observed on the other two versions.

181. (TSR) In addition to the three versions of the ADV-2, several support vehicles associated with this program have been identified.

182. (TSR) The ADV-2 launcher is a [redacted] double-axle trailer of irregular configuration. A 25X1
raised cradle (on which an ADV-2 would be placed) is center-line mounted on the trailer and is [redacted] in 25X1
length and [redacted] in width. No blast shield/deflector is on the launcher. 25X1

183. (TSR) The ADV-2 transporter is also a [redacted] double-axle trailer which is normally canvas 25X1
covered. The canvas draped over a light framework gives this vehicle a ribbed appearance. This transporter is often attached to a KRAZ-214/255 prime mover.

184. (TSR) A [redacted] long van/trailer (most likely used for avionics/guidance system checkout of the 25X1
ADV-2) has also been identified. This chamfered-roofed van/trailer has a total of eight vents, four along each side of the chamfered roof; and two box-like protrusions, one on the aft portion of the roof and one on the front of the van/trailer. This ADV-2 checkout van/trailer has also been associated with the [redacted] airframe 25X1
mounted on a BACKFIRE B which has been observed at Ramenskoye FTC and Akhtubinsk FTC.

Historical Development

185. (TSR) The earliest observable evidence of the ADV-2 program was seen on imagery of [redacted] 25X1
[redacted] of the Ramenskoye FTC. An ADV-2 transporter and an ADV-2 checkout van/trailer were at 25X1
the southeast end of the Tupolev area on those dates. The first observation of ADV-2-associated equipment at Kapustin Yar was on [redacted] when an ADV-2 transporter was south of launch pad D-3. A probable 25X1
ADV-2 transporter was also at the ASM support facility of Akhtubinsk FTC on [redacted] 25X1

186. (TSR) The first observation of an actual ADV-2 (a probable ADV-2a) on an ADV-2 launcher occurred on [redacted] at Kapustin Yar. The ADV-2a and launcher were on launch pad D-3 and, with 25X1
few exceptions, have been observed there ever since.

187. (TSR) Although an ADV-2 checkout van/trailer was at Ramenskoye as early as 1974 and two such vehicles were there on [redacted] no ADV-2 checkout van/trailer was observed at Kapustin Yar until 25X1
[redacted] The ADV-2 checkout van/trailer remained at Kapustin Yar through [redacted] 25X1

188. (TSR) A second ADV-2 launcher was at Ramenskoye FTC on [redacted] The canvas-covered 25X1
launcher and an ADV-2 transporter were in the Tupolev area through [redacted] The second launcher 25X1
and a second ADV-2 transporter were subsequently observed at Kapustin Yar on [redacted] The second 25X1
ADV-2 launcher remained canvas covered and parked adjacent to the first ADV-2 launcher through [redacted] 25X1
[redacted] 25X1

189. (TSR) A second cruise vehicle, an ADV-2b, was first identified on [redacted] at Kapustin 25X1
Yar. The ADV-2b was on the second ADV-2 launcher which had been moved to its firing position on the northeast end of the launch pad. An ADV-2b was subsequently observed here throughout the remainder of 1979 and early 1980. Only one ADV-2 transporter was at Kapustin Yar on [redacted] However, same-day 25X1
coverage of the ASM Support Facility of Akhtubinsk FTC revealed the presence of another ADV-2 transporter. An ADV-2 transporter was observed at Akhtubinsk on several subsequent coverages until [redacted] 25X1

190. (TSR) On [redacted] airframe mounted on a BACKFIRE B was identified for the 25X1
first time at the area airfield of Akhtubinsk FTC. The [redacted] airframe was originally observed in the 25X1
Tupolev area of Ramenskoye FTC on [redacted] an ADV-2 checkout van/trailer was 25X1
parked adjacent to the BACKFIRE-mounted [redacted] airframe at Akhtubinsk (Figure 4). The BACKFIRE B 25X1
with the [redacted] airframe and an ADV-2 checkout van/trailer may have been at Akhtubinsk as early as [redacted] 25X1
[redacted] however, this could not be confirmed because of poor image quality on that date. The [redacted] 25X1
airframe was observed repeatedly at Akhtubinsk until [redacted] The ADV-2 checkout van/trailer was at the area 25X1
airfield until [redacted] 25X1

191. (TSR) At Kapustin Yar an ADV-2c was first identified on [redacted] The ADV-2c was on the 25X1
launcher previously used by the ADV-2b.

192. (TSR) During June 1980, the transfer of ADV-2 equipment from Akhtubinsk FTC to Ramenskoye FTC was observed. Two missile railcars were at Akhtubinsk/Vladimirovka ASM Support Complex on [redacted] 25X1
One of the railcars had an empty, extended transfer tray. In addition, a probable ADV-2 transporter was adjacent to the new five-bay hangar at Akhtubinsk FTC. A special-purpose train was on a rail siding at Akhtubinsk on [redacted] Components of the train included the two missile railcars observed at the ASM Support 25X1
Complex on [redacted] and several flatcars, two of which carried ADV-2 checkout van/trailers. Two missile railcars 25X1
and two ADV-2 checkout van/trailers were in the Tupolev area of Ramenskoye FTC on [redacted] In addition, a 25X1
BACKFIRE B with the [redacted] airframe was also present. One of the two missile railcars was observed with 25X1
a probable ADV-2 on the extended transfer tray on [redacted] 25X1

25X1

193. (TSR) On [redacted] three ADV-2 were observed at Kapustin Yar. An ADV-2a occupied the original ADV-2a launcher. An ADV-2b was on the launch pad south of the ADV-2a. An ADV-2c was on a transporter behind the empty second ADV-2 launcher. On [redacted] only the ADV-2a was observed at Kapustin Yar. 25X1 25X1

[redacted] 25X1

[redacted]

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