

NPIC/R-853/64  
September 1964

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PHOTOGRAPHIC INTERPRETATION REPORT

# CIRCUMFERENTIAL GROUND SCAR OR TRACE IN THE MOSCOW AREA, USSR



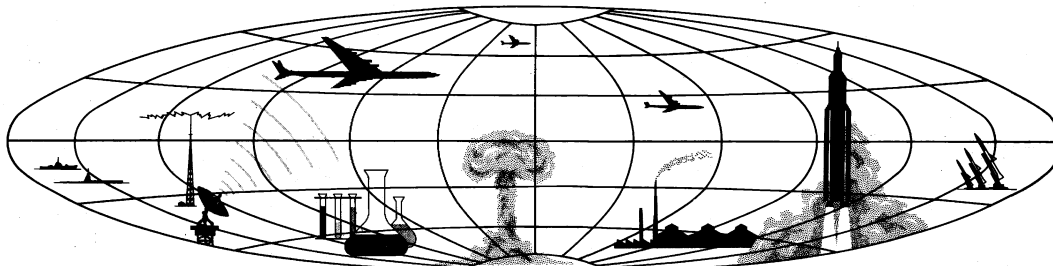
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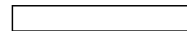
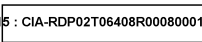
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# CIRCUMFERENTIAL GROUND SCAR OR TRACE IN THE MOSCOW AREA, USSR

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### INTRODUCTION

On excellent quality [redacted] photography of [redacted] a continuous ground scar or trace was noted around Moscow. Its path is generally oval, varying in distance from 17 to 55 nautical miles (nm) from the center of Moscow, and branches from the circumferential trace link various known military installations, several cities, and a number of unidentified facilities.

The trace is not new. Portions of it were already present on [redacted] photographic coverage of the Moscow area in [redacted] and numerous additions have been made since that time. A careful review of [redacted] photography [redacted]

[redacted] establishes the chronology of construction, and the large mosaic shown in Figure 21 is color keyed to present the detailed chronology, indicating the mission on which various segments of the trace were first identifiable.

In [redacted] there were 14 principal branches forking from the circumferential ground scar. Locations of these branches and the spurs from some of them are identified by an arbitrary numbering system adopted for this report. From the north, SA-1 SAM Site E36-1 is designated as being on Branch Line 1; other branch lines are numbered clockwise and any spurs retain the branch numeral and add A, B, and so on.

### DESCRIPTIONS OF TERMINAL POINTS

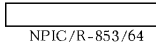
This report provides photographs from [redacted] and brief descriptions of the terminal points of branches and spurs from the circumferential ground scar as [redacted]

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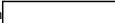


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### BRANCH LINE I

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From a point on the circumferential trace at 56-17-15N 37-35-00E, Branch Line I extends northward toward SA-1 SAM Site E36-1, 1,2 bypassing the site support area and paralleling the eastern side of the launch area (Figure 1). It continues northward to a point approximately 4,500 feet

east of the northeast corner of the launch area, where it apparently terminates. No terminal facilities were observed in 

SPUR IA. Just east of Dmitrov, a spur trace can be seen extending westward for approximately 6,200 feet to a point about 530 feet short of a group of large buildings which are

under construction (Figure 2). As of  this spur did not make contact with Branch Line I but stopped approximately 1,300 feet west of it in a circular cleared area containing a building that measured approximately 30 by 10 feet (item 1). Inasmuch as Branch Line I itself was still under construction, it is probable that this spur was also incomplete and may link up later at 56-19-51N 37-35-00E.

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FIGURE 1. SAM SITE E36-1.



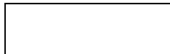
FIGURE 2. SPUR IA, EAST OF DMITROV.



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**BRANCH LINE II**

This trace branches from the main circumferential trace at 56-09-45N 38-00-40E, passes just south and east of Zagorsk, south of Aleksandrov, and has been traced as far as the Kolchugino area, approximately 67 nm from Moscow.

SPUR IIA. This trace extends westward from Branch

Line II at 56-14-40N 38-07-50E to a point near the town of Mitino. The terminus is located at 56-15-00N 38-01-15E, in a circular cleared area, apparently slightly mounded, which contains a possible structure (Figure 3, item 1).

SPUR IIA1. Spur IIA1 branches from Spur IIA at 56-15-05N 38-06-30E and extends north to the southwest edge of the

city of Zagorsk. [redacted] the trace appeared to end in a generally circular clearing containing a rectangular building that measures approximately 30 by 10 feet (Figure 4, item 1). The clearing is located about 1,850 feet south of a railroad, at 56-16-50N 38-07-00E. Additional scarring and track activity to the north of the terminus may indicate future extension in that direction.

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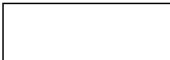
FIGURE 3. TERMINUS OF SPUR IIA, NEAR MITINO.



FIGURE 4. TERMINUS OF SPUR IIA1, ZAGORSK.

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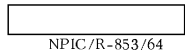
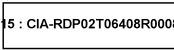
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
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SPUR IIB. This spur leaves the main branch, II, south of Aleksandrov at 56-21-00N 38-44-10E, and heads generally south approximately 2.5 nm to a point on the east bank of the Sherna River in the town of Karabanovo. The lack of any terminal facility at this point in  may indicate that the trace will be extended across the river later (Figure 5).

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### BRANCH LINE III

This portion of the trace takes off from the circumferential scar at 56-04-30N 38-05-00E and extends northeast toward SAM Site E05-1. <sup>3,4</sup> The trace approaches the site support area from the west and, after a short jog where it passes a possible structure, (Figure 6, item 1)

disappears in the light-toned ground scarring adjacent to the support area.

SPUR IIIA. Just southwest of the village of Fryanovo, this spur forks from Branch III at 56-07-15N 38-24-40E. The trace extends southeast and has a short spur, IIIA1,



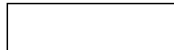
FIGURE 5. SPUR IIB, KARABANOVO.



FIGURE 6. SAM SITE E05-1.

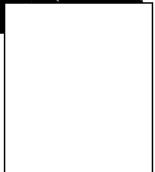
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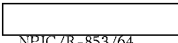
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branching northeast to the Kirzhach Area Suspect Satellite Tracking Facility, 5/ where it is lost in the light-toned earth scarring of the support area (Figure 7). The main portion of Spur IIIA continues past the facility and disappears at a point along a road at 56-03-05N 38-32-40E, but no terminal facility is apparent.

#### BRANCH LINE IV

Leaving the main portion of the circumferential trace at 55-56-25N 38-13-20E, Branch Line IV goes northeast for approximately 6 nm. It passes south and east of Moscow SAM Storage Site No 1 to a generally circular clearing which contains a building that measures approximately

20 by 10 feet (Figure 8, item 1). About 150 feet farther northeast, another trace can be seen extending north where it becomes lost in the light-toned earth around the edge of an unidentified installation. Although the two traces were not joined in [redacted] it is probable that a connection subsequently will be made.

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FIGURE 7. KIRZHACH AREA SUSPECT SATELLITE TRACKING FACILITY.

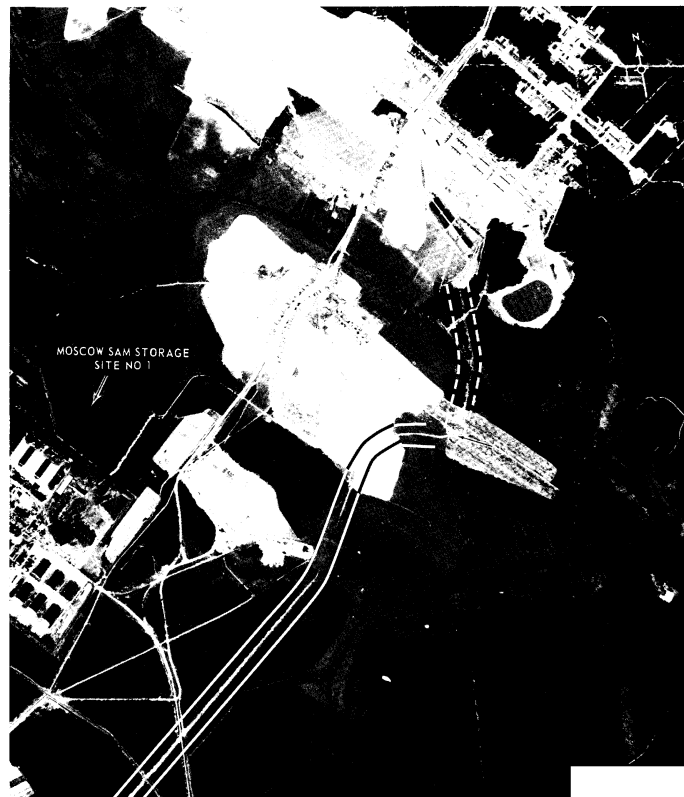
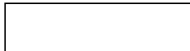


FIGURE 8. BRANCH LINE IV AND INSTALLATION UNDER CONSTRUCTION.

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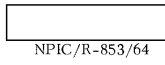
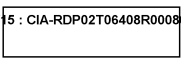
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### BRANCH LINE V

Extending nearly due east from the circumferential trace at 55-52-20N 38-15-20E, Branch Line V travels slightly less than 6 nm to a field on the northwest edge of Noginsk. The trace appears to end in a clearing containing a possible structure at 55-53-30N 38-25-20E (Figure 9, item 1). Im-

mediately east of the terminal point, a building that measures approximately 50 by 10 feet can be seen (item 2), but it does not appear to be physically connected to the trace.

### BRANCH LINE VI

Branch Line VI begins at 55-51-30N 38-15-35E on the

circumferential trace and heads generally west, passing north of Moscow/Monino Airfield and south of Moscow/Shchelkovo Airfield. It apparently terminates in a light toned field at 55-51-35N 37-59-55E. Other ground scars can be seen leaving this general area, but positive identification of any connection with Branch Line VI is not possible.



FIGURE 9. BRANCH LINE V NEAR NOGINSK.



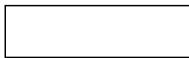
FIGURE 10. BRANCH LINE VII, ELEKTROSTAL.



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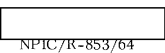
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**BRANCH LINE VII**

This branch leaves the main circumferential trace at 55-44-10N 38-25-00E and trends northeast for approximately 2.5 nm where it becomes indistinct (Figure 10) at the southwest edge of the Elektrostal Industrial Complex. 6/

**BRANCH LINE VIII**

Leaving the circumferential trace at 55-43-25N 38-25-35E, Branch Line VIII extends west-southwest for slightly more than 5.5 nm. Ditching has progressed to a point at 55-41-50N 38-18-40E, but clearing of vegetation continues for approximately another 8,000 feet to a wooded area. The trace ends there among numerous other scars that have been cut through the woods in short segments.

**BRANCH LINE IX**

Branch No IX begins just south of Ponor River at 55-38-00N 38-49-30E and continues northeasterly for approximately 5 nm to the outskirts of Likino-Dulevo, where it becomes less and less distinct and no longer identifiable at approximately 55-41-00N 38-56-20E. [redacted] it was apparently incomplete.

**BRANCH LINE X**

This is the shortest of all the branches, being only approximately 2,800 feet long. Beginning at the main trace at 55-34-30N 38-51-30E, it runs east-northeast to a point near the west bank of the Nerskaya River, on the western edge of Kurovskoye.

**BRANCH LINE XI**

Branch Line XI can be traced northwest from the main scar at approximately 55-05-00N 38-27-30E for a distance of approximately 5 nm. It approaches SAM Site E15-1 from the southeast, 1,7/ passes east of the launch area to a point approximately half way along its length and 1,300 feet south of the site support area. Additional scarring and track

activity extend toward the site support area, possibly indicating further construction of the trace. [redacted] however,

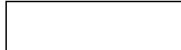
the trace did not terminate at any identifiable facility (Figure 11).

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FIGURE 11. SAM SITE E15-1.

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### BRANCH LINE XII

The longest of the branches is Line XII which begins on the east edge of the city of Serpukhov, at 54-55-40N 37-30-55E and has been tracked to the west far beyond the area pertinent to this report. Three main spurs fork from the line as shown in Figure 21.

SPUR XIII. Beginning near the west bank of the Protva River at 55-09-00N 36-32-30E, this spur trends generally northeast to a point approximately 4,000 feet southwest of the center of the Borovsk Area [redacted]. It terminates at a building that measures approximately 30 by 15 feet, at 55-11-10N 36-36-20E (Figure 12, item 1).

SPUR XIIB. Spur trace XIIB leaves the branch line at a point on the east side of the Protva River, northwest of Borovsk, at 55-15-15N 36-22-50E and proceeds approximately 4.5 nm, passing just west of SAM Site E24-1. 1,2,9/ A short spur (XIIB2) enters the site and extends approximately 1,850 feet east to a building which measures approximately 30 by 10 feet (Figure 13, item 1). Two possi-

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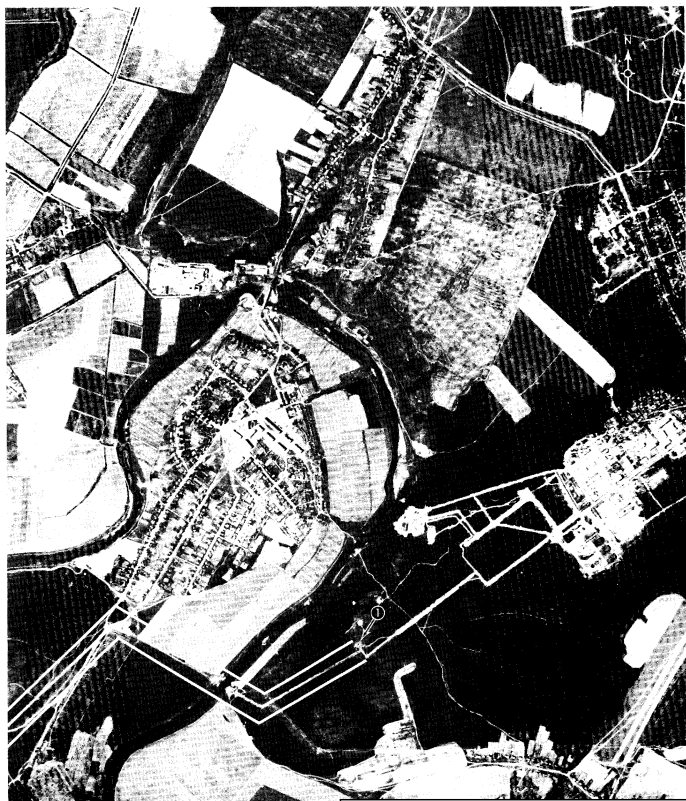


FIGURE 12. BOROVSK AREA



FIGURE 13. SAM SITE E24-1.

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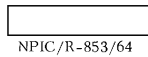
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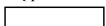


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ble trails leave this building, one leading toward the support area and the other toward the launch area.

From SAM Site E24-1, spur trace XIIB extends approximately 9 nm to a point northeast of the SAM site where it enters a clearing containing a building that measures approxi-

mately 30 by 15 feet (Figure 14, item 1) at 55-28-40N 36-37-20E. From this clearing, the trace continues north approximately 6,800 feet and becomes lost in the light-toned earth scarring at Support Area A of the Suspect AMM Phased-Array Radar Installation. 10,11/

SPUR XIIB1. At the point where Spur XIIB makes its first turn north (55-17-50N 36-29-15E), a spur branches generally east for approximately 2 nm and enters a previously reported  installation at 55-18-30N 36-33-30E (Figure 15). 4/

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FIGURE 14. SUPPORT AREA A, SUSPECT RADAR INSTALLATION.



FIGURE 15. SPUR XIIB1.

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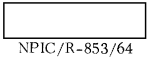


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SPUR XIIC. Approximately 16 nm northwest of Spur XIIB, at 55-28-15N 36-06-20E, Spur XIIC begins just east of Mozhaysk Ammunition Depot and proceeds to a point

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The terminus of the spur is at the

north edge of the installation (Figure 16).

**BRANCH LINE XIII**

Branch Line XIII leaves the circumferential scar at 56-00-10N 37-05-40E and can be traced northwest for approxi-

mately 46 nm to the southern edge of the Volga River. There it becomes lost in the earth scarring at the east edge of a large powerplant, under construction north of the city of Karachary at approximately 56-44-30N 36-46-20E (Figure 17).

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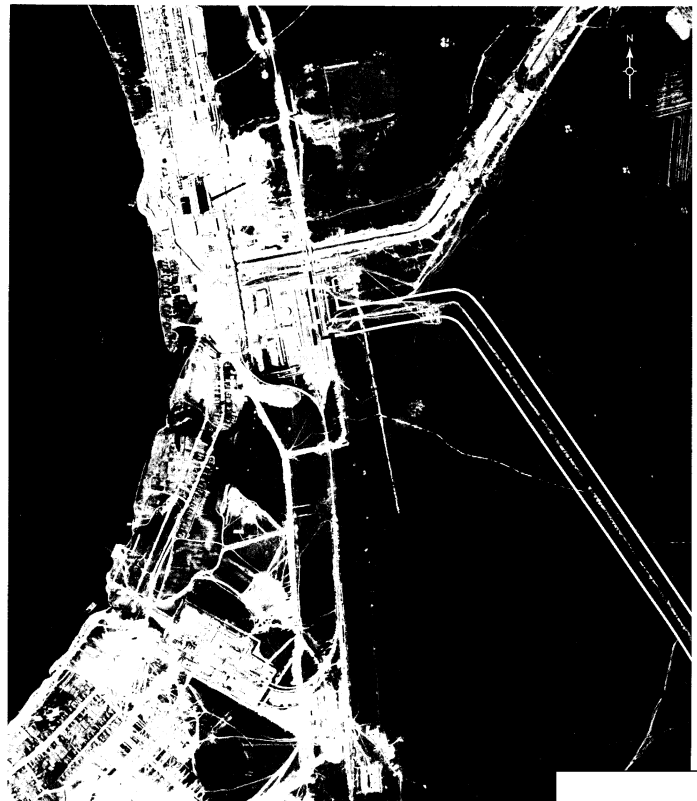
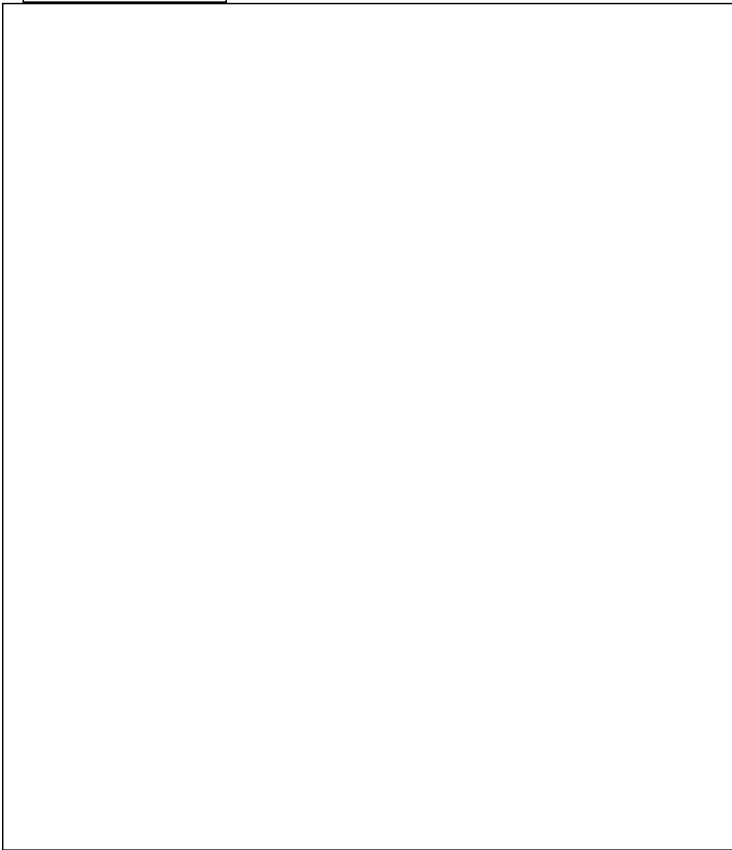
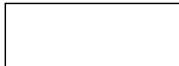


FIGURE 17. POWERPLANT UNDER CONSTRUCTION, KARACHARY.

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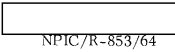
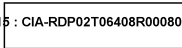


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SPUR XIII A. This trace departs from Branch XIII at a point approximately one nm north of the Istra River, at 56-18-30N 36-54-20E, and passes south and west of SAM Site E33-1 support area, terminating approximately 1,000 feet west of there and 2,600 feet north of the Istra River

(Figure 18). Additional track activity and scarring to the west and northwest may indicate the future direction of extensions, but in [redacted] the trace appeared to terminate in an open field with no direct connection to any identifiable facility. 1,2,9/

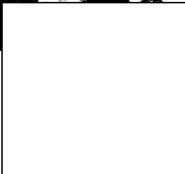
SPUR XIII B. Just short of the northern terminus of Branch XIII, near Karachary, a short spur heads southwest for approximately 1.5 nm and ends in an area of earth scarring on the east edge of Karachary at 56-41-40N 36-47-30E (Figure 19).



FIGURE 18. SAM SITE E33-1.



FIGURE 19. SPUR XIII B, KARACHARY.



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FIGURE 20. BRANCH LINE XIV.

### BRANCH LINE XIV

This branch line leaves the circumferential trace at 56-03-50N 36-08-40E and extends southeast approximately 15 nm to a point near the former Moscow/Khimki Airfield. The terminal point is located in an open field approximately 3,200 feet west of an area of construction north of the former airfield and it is not associated with any visible facility (Figure 20).

### CONCLUSIONS

The circumferential trace or ground scar around Moscow was first identified on relatively small-scale, [redacted] photography of [redacted]. Subsequent review of earlier [redacted] photography helped establish construction chronology, but no firm identification of the purpose of the trace can be made from available photography.

Several sources have reported evidence of buried natural gas pipelines that girdle Moscow and branch to many of the areas where the trace is apparent, 13,14/ while other sources have reported buried cable lines at various places which roughly correspond to portions of the trace. 15-18/ Inasmuch as buried pipeline and buried cable both would appear only as a scar or trace, it is not possible to identify the purpose of the scar from photography alone.

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FIGURE 21. CONSTRUCTION CHRONOLOGY OF THE CIRCUMFERENTIAL TRACE.

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- 2. DIA. US Air Target Chart, Series 200, Sheet 0154-23HL, 2d ed, Apr 63, scale 1:200,000 (SECRET)
- 3. DIA. US Air Target Chart, Series 200, Sheet 0167-4HL, 2d ed, Mar 63, scale 1:200,000 (SECRET)
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- 5. NPIC. R-786/64, *Oak - Part II*, (TOP SECRET)
- 6. NPIC. R-345/64, *Elektrostal Complex, USSR*, Mar 64 (TOP SECRET)
- 7. NPIC. R-280/64, *Possible AMM-Associated Facility, SAM Site E15-1, Moscow, USSR*, May 64 (TOP SECRET)
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