

**Secret**

*CIA Internal Use Only  
Access Controlled by  
CIA History  
Staff and DD/S&T*



NATIONAL PHOTOGRAPHIC INTERPRETATION CENTER

THE YEARS OF PROJECT HTAUTOMAT, 1956 - 1958

VOLUME VI

*by*



25X1

**Secret**

NPIC 3  
December 1974  
Copy 1 of 2

PERMANENT HISTORICAL DOCUMENT

## WARNING

**This document contains information affecting the national defense of the United States, within the meaning of Title 18, sections 793 and 794, of the US Code, as amended. Its transmission or revelation of its contents to or receipt by an unauthorized person is prohibited by law.**



25X1

**WARNING NOTICE  
SENSITIVE INTELLIGENCE SOURCES  
AND METHODS INVOLVED**

**SECRET**

*Access Controlled by CIA History Staff and DD/S&T*

NATIONAL PHOTOGRAPHIC INTERPRETATION CENTER

THE YEARS OF PROJECT HTAUTOMAT, 1956 - 1958

VOLUME VI

*by*



25X1

*Copies:*

- #1 - HS-CIA
- #2 - DD/S&T

**SECRET**

SECRET

Contents

Volume I

|   | <u>Page</u> |
|---|-------------|
| Foreword . . . . .  | iii         |
| I. The First Looks Behind the Iron Curtain. . . . .                         | 1           |
| A. The Anatomy of HTA . . . . .   | 3           |
| 1. Office of the Chief. . . . .   | 4           |
| 2. Special Projects Branch. . . . .   | 4           |
| 3. Industrial and Geographic Branches . . . . .                             | 6           |
| 4. Technical Intelligence Branch. . . . .                                   | 8           |
| 5. Support Staff. . . . .   | 10          |
| 6. Administrative Staff . . . . .   | 12          |
| 7. Statistical Branch, OCR. . . . .   | 12          |
| 8. Military Liaison Components. . . . .                                     | 14          |
| 9. Central Branch . . . . .   | 16          |
| B. The First Eight Missions Dominate Events of<br>July and August . . . . . | 18          |
| 1. The Eight Missions and Their Objectives. . . . .                         | 20          |
| 2. Immediate Exploitation of the First<br>Eight Missions. . . . .           | 21          |
| 3. Detailed Exploitation During July<br>and August 1956 . . . . .           | 24          |
| 4. Technical Support. . . . .   | 27          |

- v -

SECRET

SECRET

|   | <u>Page</u> |      |
|---|-------------|------|
| 5. Support Activities . . . . .                               | 29          |      |
| 6. OCR Statistical Branch Charges<br>Forward . . . . .        | 30          |      |
| 7. [ ] Task Force: Headquarters<br>Outpost . . . . .          | 34          | 25X1 |
| 8. Return from Europe . . . . .                               | 35          |      |
| II. The Middle East Crisis . . . . .                          | 45          |      |
| A. U-2s Assume a Tactical Role. . . . .                       | 45          |      |
| B. HTA and the PARAMOUNT Committee. . . . .                   | 47          |      |
| C. Functioning of the PARAMOUNT Committee . .                 | 54          |      |
| [ ]   |             | 25X1 |
| E. HTA Continues Work on the First Eight<br>Missions. . . . . | 58          |      |
| F. A Stirring Giant . . . . .                                 | 60          |      |
| G. PI Training. . . . .                                       | 67          |      |
| H. Looking Back . . . . .                                     | 69          |      |
| III. Back on Course . . . . .                                 | 72          |      |
| A. [ ] . . . . .  | 74          | 25X1 |
| B. Organizational Incongruity . . . . .                       | 75          |      |
| C. Briefing-Aid Books . . . . .                               | 77          |      |
| D. Soviet Long-Range Airfields. . . . .                       | 80          |      |
| E. Mozhaysk . . . . .   | 84          |      |
| F. Testing. . . Testing . . . . .                             | 100         |      |
| G. Signs of Drought . . . . .                                 | 105         |      |

SECRET

SECRET

|  | <u>Page</u> |
|--|-------------|
| IV. Reorganization and Renewal . . . . .   | 109         |
| A. Training and Orientation . . . . .  | 110         |
| B. Training and Orientation Offered by HTA. . . . .                                    | 121         |
| C. New Tools for Eager Hands. . . . .  | 122         |
| D. Familiar Tasks . . . . .  | 132         |
| E. Reorganization and Reassignment. . . . .  | 148         |
| V. On to Greater Accomplishments. . . . .  | 159         |
| A. First Aerial Coverage of Russian<br>Scientific and Technical Installations. . . . . | 159         |
| B. Rejuvenation and Resumption of<br>Discoveries . . . . .                             | 162         |
| 1. Changing Faces and Responsibilities. . . . .  | 163         |
| 2. New Discoveries Dominate Work at HTA . . . . .                                      | 166         |
| C. Other Mouths to Feed . . . . .  | 171         |
| D. New Administrative Procedures. . . . .  | 178         |
| E. Specter of a Job Freeze. . . . .  | 182         |

Volume II

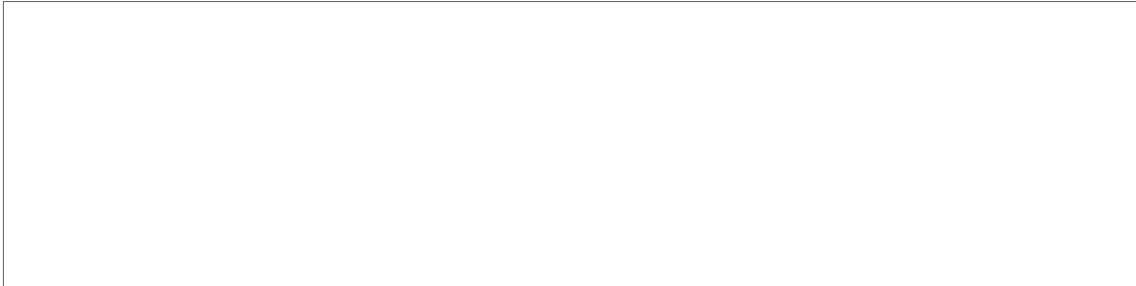
|  |     |
|--|-----|
| VI. JAM SESSION Steals the Show. . . . .                           | 184 |
| A. Establishment of JAM SESSION . . . . .                          | 184 |
|  |     |
| C. GMIC Targets . . . . .  | 203 |
| 1. The Tyura Tam Missile Test Center and<br>Test Range. . . . .    | 208 |
| 2. The Kapustin Yar Missile Test Center<br>and Test Range. . . . . | 217 |

25X1

SECRET

SECRET

|  | <u>Page</u> |
|--|-------------|
| 3. Good-Bye to GMIC Consultants . . . . .                                    | 240         |
| D. Show and Tell. . . . .  | 242         |
| E. Other PI Exploitation and Reporting. . . . .                              | 251         |
| F. Making Equipment Function Better and<br>Getting Better Equipment. . . . . | 258         |
| G. The HTAUTOMAT Organization Reacts to JAM<br>SESSION . . . . .             | 271         |
| VII. Winds of Change. . . . .  | 285         |



25X1

|   |     |
|---|-----|
| D. Not by JAM SESSION Alone . . . . .                         | 320 |
| E. How to Proceed With the Publication<br>of Reports. . . . . | 327 |
| F. Carpenters, Plumbers, and New Equipment. . . . .           | 334 |
| G. People and Hierarchies . . . . .                           | 340 |

Volume III

|   |     |
|---|-----|
| VIII. HTAUTOMAT Becomes the Photographic<br>Intelligence Center . . . . . | 355 |
| A. The Last Months of JAM SESSION . . . . .                               | 355 |
| 1. COMINT Comes to MSB. . . . .   | 356 |
| 2. A Bear by the Tail . . . . .   | 357 |
| 3. The Show Goes On . . . . .   | 366 |

- viii -

SECRET

SECRET

|   | <u>Page</u> |
|---|-------------|
| 4. A General on His Knees and PI Keys . . .   | 376         |
| 5. Two Soviet Heavy Water Plants. . . . .     | 386         |
| 6. Uranium Mining and Milling Sites . . .     | 390         |
| B. Keeping Busy . . . . .                     | 418         |
| C. Operating Procedures for HTA -- and PIC. . | 427         |
| D. Automated Mensuration -- With Bugs . . . . | 438         |
|   |             |
| F. A Center at Last . . . . .                 | 449         |

25X1

Appendices

|                               |     |
|-------------------------------|-----|
| A. Index. . . . .             | 457 |
| B. Chronology . . . . .       | 477 |
| C. Source References. . . . . | 482 |

Volume IV

Figures, No. 1 through No. 39

Volume V

Figures, No. 40 through No. 86

Volume VI

Figures, No. 87 through No. 129

SECRET



SECRET

VOLUME IV

LIST OF FIGURES

Page

Figure 1. Steuart Building..... 2

Figure 2. The U-2: Reconnaissance Aircraft Supreme..... 4

Figure 3. HTAUTOMAT: Organization and Key Personnel, July 1956..... 6

Figure 4. [Redacted]..... 8

Figure 5. Central Building ..... 10

Figure 6. Range of U-2 aircraft from operational bases..... 12

Figure 7. Tracks of the first eight U-2 operational missions..... 14

Figure 8. MM 50 Surveying Camera..... 16

Figure 9. Orsha Airfield and probable special weapons storage area,  
14 July 1956..... 18

Figure 10. Stry Airfield and special weapons storage and loading  
installation, 10 July 1956..... 20

Figure 11. Mozhaysk Installation, 5 July 1956..... 22

Figure 12. Domed Structure, Mozhaysk Installation..... 24

Figure 13. Artist's concept of the domed structure and its incomplete  
counterpart (Unit 1)..... 26

Figure 14. Oblique view and metrical analysis of the counterpart  
of the completed dome..... 28

Figure 15. Composite layout of Units 4, 5, and 6..... 30

Figure 16. P2V-7: Disappointment in Night Photo Reconnaissance..... 32

Figure 17. Comparator obtained from Photogrammetry, Inc. .... 34

Figure 18. Mensuration teams in the Technical Intelligence  
Services Branch, c. late 1957..... 36

Figure 19. The Reed Transforming Printer..... 38

Figure 20. The Reed Rectifier..... 40

Figure 21. Modified Binocular Microscope..... 42

Figure 22. Using the Heath Prisms..... 44

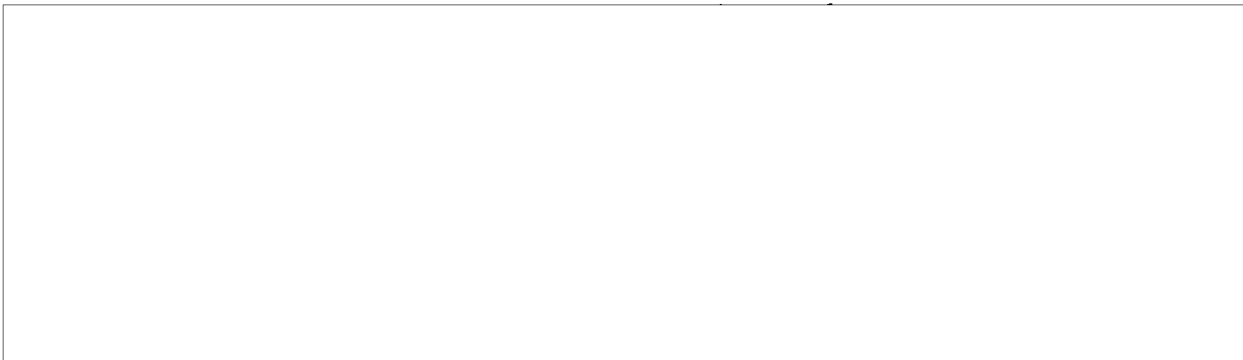
Figure 23. "Twin Eyes," 10 July 1956..... 46

Figure 24. Karangit Installation, 10 July 1956..... 48

Figure 25. HTA Organizational Realignment, July 1957..... 50

Figure 26. U-2 bases and reference points for important targets  
covered during the summer and fall of 1957..... 52

25X1



25X1

SECRET

## SECRET

## LIST OF FIGURES (Continued)

Page

25X1

- |            |   |    |
|------------|---|----|
| Figure 39. | Location and general geographical relationships of the Tyura Tam Missile Test Center and associated missile test range..... | 78 |
|------------|---|----|

## VOLUME V

- |            |   |    |
|------------|---|----|
| Figure 40. | Chief components of the Tyura Tam Missile Test Center, August 1957.....   | 80 |
| Figure 41. | Launch Area A, Tyura Tam Missile Test Center, August 1957.....  | 82 |
| Figure 42. | Details and dimensions of the launching platform and associated pit, Launch Area A, Tyura Tam Missile Test Center, August 1957.....                       | 84 |
| Figure 43. | Range head facilities, Tyura Tam Missile Test Center, August 1957.....  | 86 |
| Figure 44. | Details of launch support facilities, Launch Area A, Tyura Tam Missile Test Center, August 1957.....  | 88 |
| Figure 45. | Support Base, Tyura Tam Missile Test Center, August 1957.....   | 90 |
| Figure 46. | Communications Area B, Tyura Tam Missile Test Center, August 1957.....  | 92 |
| Figure 47. | Rhombic and fishbone antenna arrays and the orientation and dimensions of those in Communications Area B, Tyura Tam Missile Test Center, August 1957..... | 94 |
| Figure 48. | Probable propellant production plant under construction, Tyura Tam Missile Test Center, August 1957.....  | 96 |
| Figure 49. | Probable primary direction of fire from Launch Area A, Tyura Tam Missile Test Center.....   | 98 |

SECRET

| LIST OF FIGURES (Continued) |   | Page |
|-----------------------------|---|------|
| Figure 50.                  | Probable terminal range instrumentation in the Kamchatka Peninsula for the Tyura Tam Missile Test Range, June and September 1957.....                                       | 100  |
| Figure 51.                  | Communications Center under construction in September 1957, near Kluychi on the Kamchatka Peninsula.....  | 102  |
| Figure 52.                  | Layout of range head facilities with respect to each other and to the settlements of Kapustin Yar and Vladimirovka, September 1957.....                                     | 104  |
| Figure 53.                  | Zones 4, 5, and 6, Kapustin Yar Missile Test Center, September 1957.....  | 106  |
| Figure 54.                  | Layout of facilities, Zones 7 and 8, Kapustin Yar Missile Test Center, September 1957.....  | 108  |
| Figure 55.                  | Trailer-mounted Soviet MRBM associated by JAM SESSION consultants with firings from Zone 7, Kapustin Yar Missile Test Center.....   | 110  |
| Figure 56.                  | Tank-mounted short-range Soviet ballistic missile associated by JAM SESSION consultants with firings from the smaller pads at Zone 7, Kapustin Yar Missile Test Center..... | 112  |
| Figure 57.                  | Zones 7 and 8, Kapustin Yar Missile Test Center, as they appeared on photography of 10 September 1957.....  | 114  |
| Figure 58.                  | Photograph of Zone 9, Kapustin Yar Missile Test Center, September 1957.....   | 116  |
| Figure 59.                  | Layout of facilities, Zone 9, Kapustin Yar Missile Test Center.....   | 118  |
| Figure 60.                  | Launch Area South, Zone 9, Kapustin Yar Missile Test Center, September 1957.....  | 120  |
| Figure 61.                  | Photograph of launch complex, Zone 10, Kapustin Yar Missile Test Center, September 1957.....  | 122  |
| Figure 62.                  | Perspective view of launch complex, Zone 10, Kapustin Yar Missile Test Center, September 1957.....  | 124  |
| Figure 63.                  | Zone 11, Kapustin Yar Missile Test Center, September 1957.....  | 126  |
| Figure 64.                  | Zone 12, Kapustin Yar Missile Test Center, September 1957.....  | 128  |
| Figure 65.                  | Vladimirovka Airfield Complex, Kapustin Yar Missile Test Center, September 1957.....  | 130  |
| Figure 66.                  | Cruise-missile test complex, Zone 15, Kapustin Yar Missile Test Center, September 1957.....   | 132  |
| Figure 67.                  | Airborne-missile assembly and loading complex, Kapustin Yar Missile Test Center, September 1957.....  | 134  |
| Figure 68.                  | Layout and dimensions of structures, airborne-missile assembly and loading complex, Kapustin Yar Missile Test Center, September 1957.....                                   | 136  |

- iii -

SECRET

## SECRET

| LIST OF FIGURES (Continued) |   | Page |
|-----------------------------|---|------|
| Figure 69.                  | Surface-to-air missile test complex, Zone 1, Kapustin Yar Missile Test Center, September 1957.....  | 138  |
| Figure 70.                  | Surface-to-air missile test range guidance and instrumentation facilities, Zone 2, Kapustin Yar Missile Test Center, September 1957.....  | 140  |
| Figure 71.                  | Surface-to-air missiles photographed in the Moscow parade and believed to be the type tested at the surface-to-air missile test facility, Kapustin Yar Missile Test Center..... | 142  |
| Figure 72.                  | Forward instrumentation, Zone 7, Kapustin Yar Missile Test Center, September 1957.....  | 144  |
| Figure 73.                  | Guidance and forward instrumentation, Zone 9, Kapustin Yar Missile Test Center, September 1957.....   | 146  |
| Figure 74.                  | L-shaped instrument patterns associated with Zone 10, Kapustin Yar Missile Test Center, September 1957.....   | 148  |
| Figure 75.                  | The ALWAC III-E Computer.....   | 150  |

25X1

VOLUME VI

LIST OF FIGURES (Continued)

Page

25X1



Figure 98. Location of Vozrozhdeniya Island, USSR..... 196  
Figure 99. Vozrozhdeniya Island and facilities, August 1957..... 198

25X1

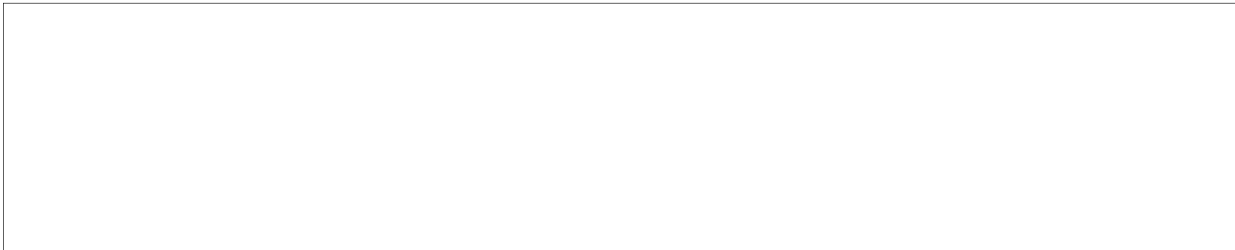


Figure 104. Konstantin Island facility, across the strait from  
Vozrozhdeniya Island, August 1957..... 208  
Figure 105. Supply Base at Aralsk for operations on  
Vozrozhdeniya Island, August 1957..... 210  
Figure 106. Prepared Table of Organization, 7 March 1958..... 212  
Figure 107. Overall view of the Chirchik Electrochemical  
Combine, August 1957..... 214

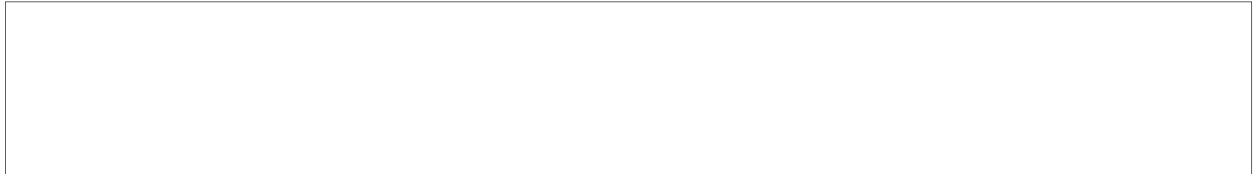
- v -

SECRET

SECRET

LIST OF FIGURES (Continued)

Page



25X1

Figure 110. The Kadshi-Say mining and milling complex, August 1957..... 220



25X1

Figure 112. Location of the mining and milling sites at Taboshar, Ispisar, and Mayly-Say with respect to each other and to population centers in the Fergana Valley of the USSR..... 224

Figure 113. The Mayly-Say mining and milling complex, August 1957..... 226



25X1

Figure 115. Taboshar mining and milling complex, August 1957..... 230



25X1

Figure 129. The Nistri TA-3 Stereocomparator..... 258

**Page Denied**

Next 21 Page(s) In Document Denied

SECRET

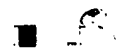


FIGURE 98

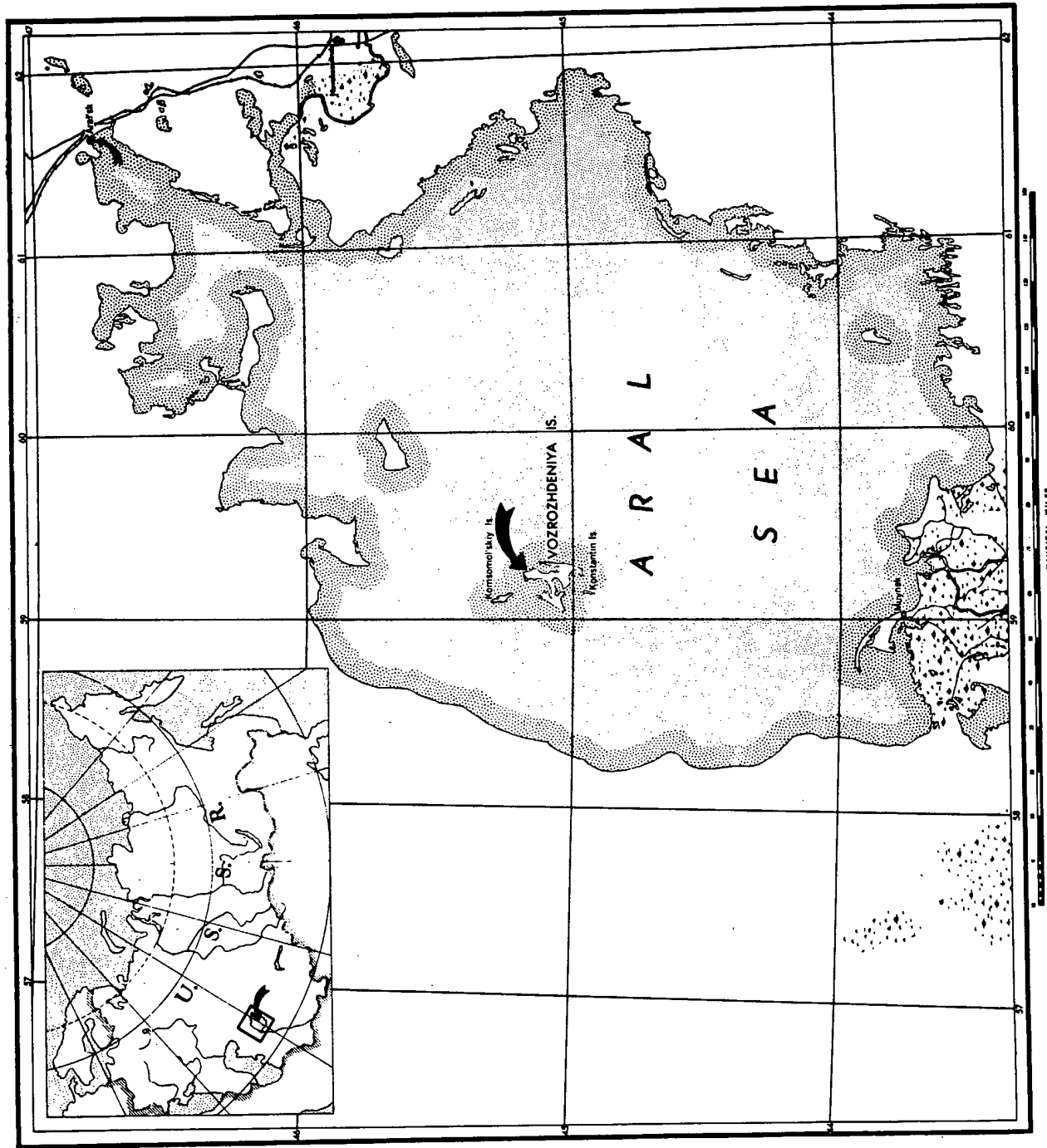
Location of Vozrozhdeniya Island, USSR.

- 195 -

SECRET



SECRET



SECRET

**SECRET**

**FIGURE 99**

**Vozrozhdeniya Island and facilities, August 1957.**

- 197 -

**SECRET**



**Page Denied**

Next 7 Page(s) In Document Denied

**SECRET**

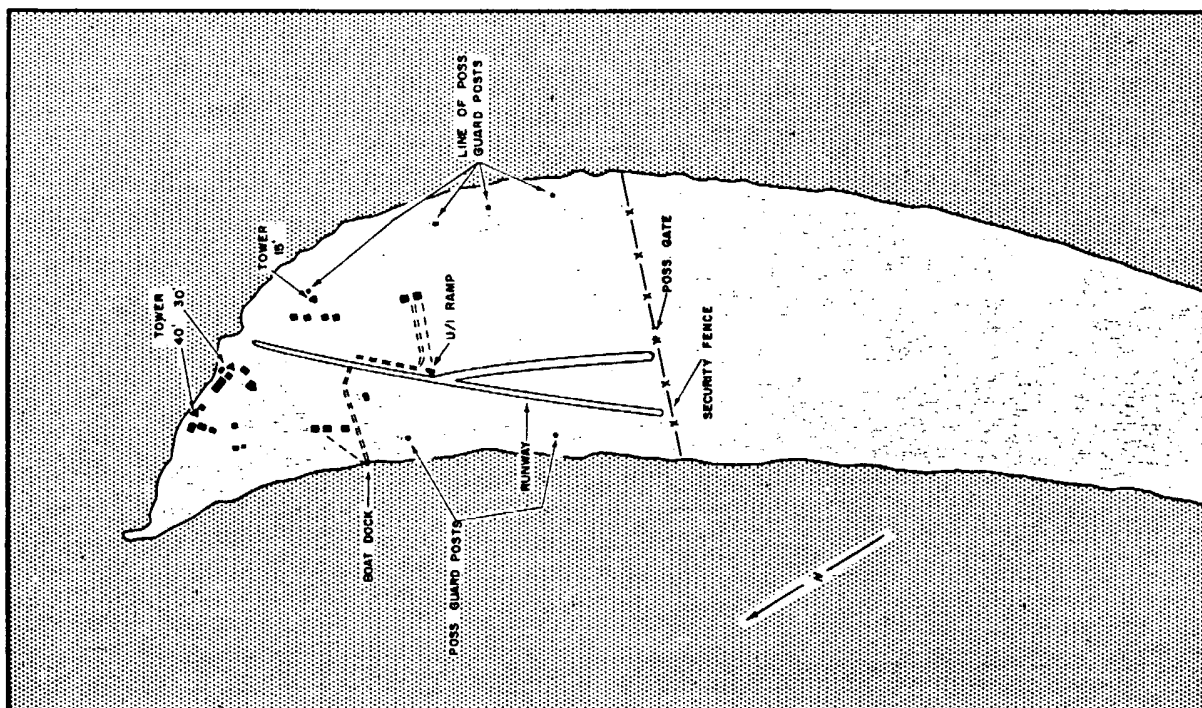
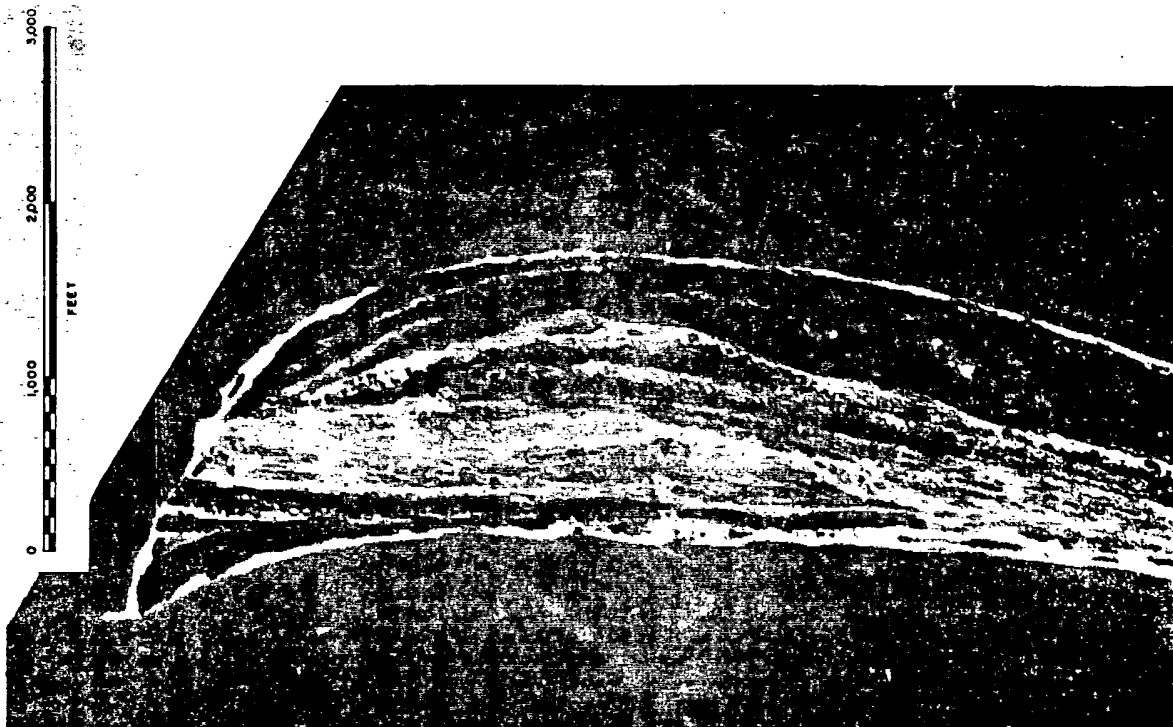
**FIGURE 104**

**Konstantin Island facility, across the strait from  
Vozrozhdeniya Island, August 1957.**

- 207 -

**SECRET**

SECRET



- 208 -

SECRET

SECRET

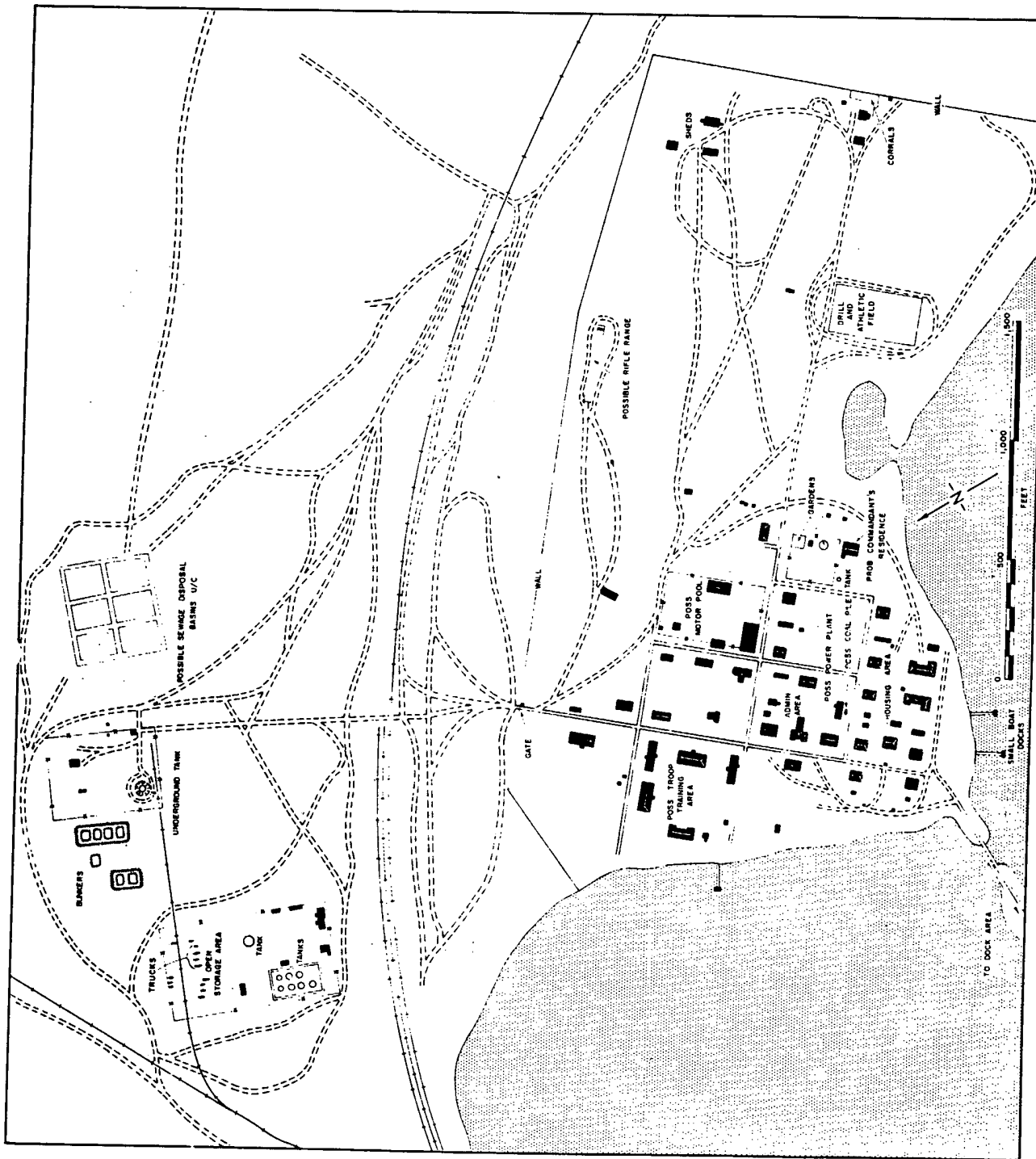
FIGURE 105

Supply Base at Aralsk for operations on Vozrozhdeniya  
Island, August 1957.

- 209 -

SECRET

SECRET



- 210 -

SECRET



SECRET

FIGURE 106

Prepared Table of Organization, 7 March 1958. This prepared reorganization involved a merger of the ORR Photo Intelligence Division and the OCR Statistical Division to form the CIA Photographic Intelligence Center at the Office level under the DDI.

- 211 -

SECRET

**Page Denied**

SECRET

FIGURE 107

Overall view of the Chirchik Electrochemical Combine, August 1957. The Boz-Su Canal appears in the upper left of the photograph.

- 213 -

SECRET

**Page Denied**

Next 4 Page(s) In Document Denied

**SECRET**

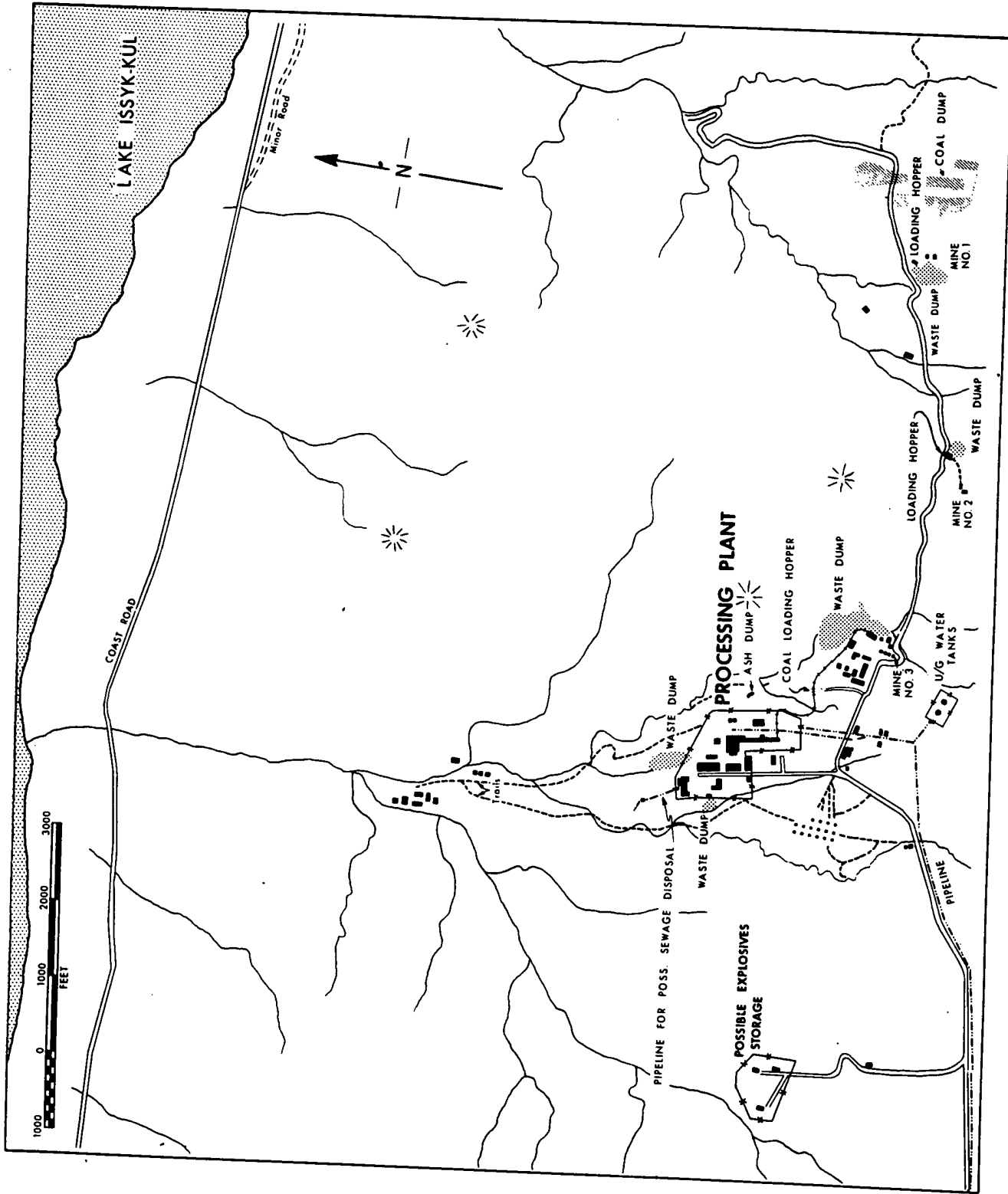
**FIGURE 110**

**The Kadzhi-Say mining and milling complex, August 1957. The town after which the complex was named lies off the map, to the west.**

- 219 -

**SECRET**

SECRET



SECRET

**Page Denied**

Next 1 Page(s) In Document Denied

SECRET

FIGURE 112

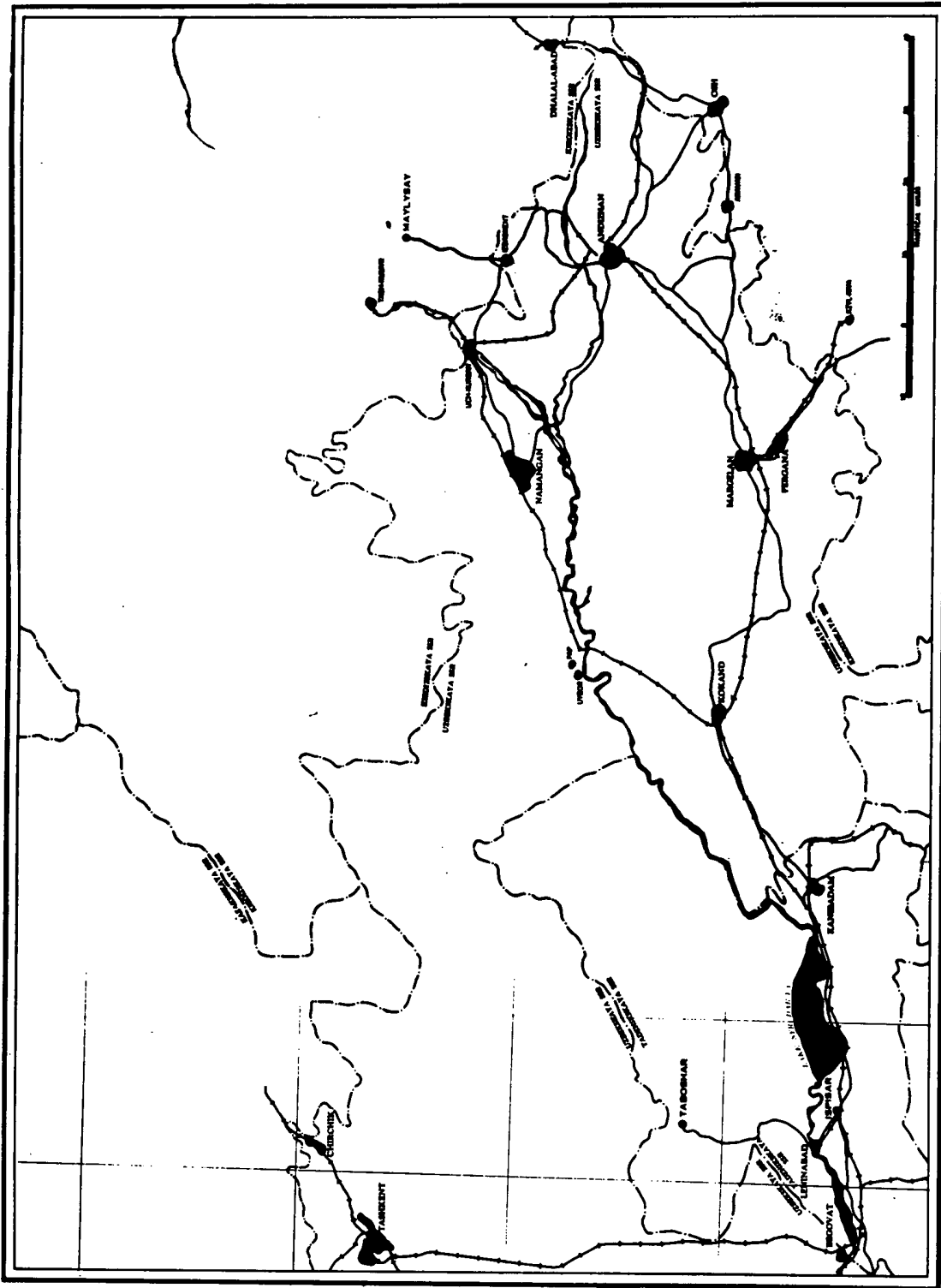
Location of the mining and milling sites at Taboshar, Ispisar, and Mayly-Say with respect to each other and to population centers in the Fergana Valley of the USSR.

- 223 -

SECRET



SECRET



SECRET

**Page Denied**

Next 3 Page(s) In Document Denied

SECRET

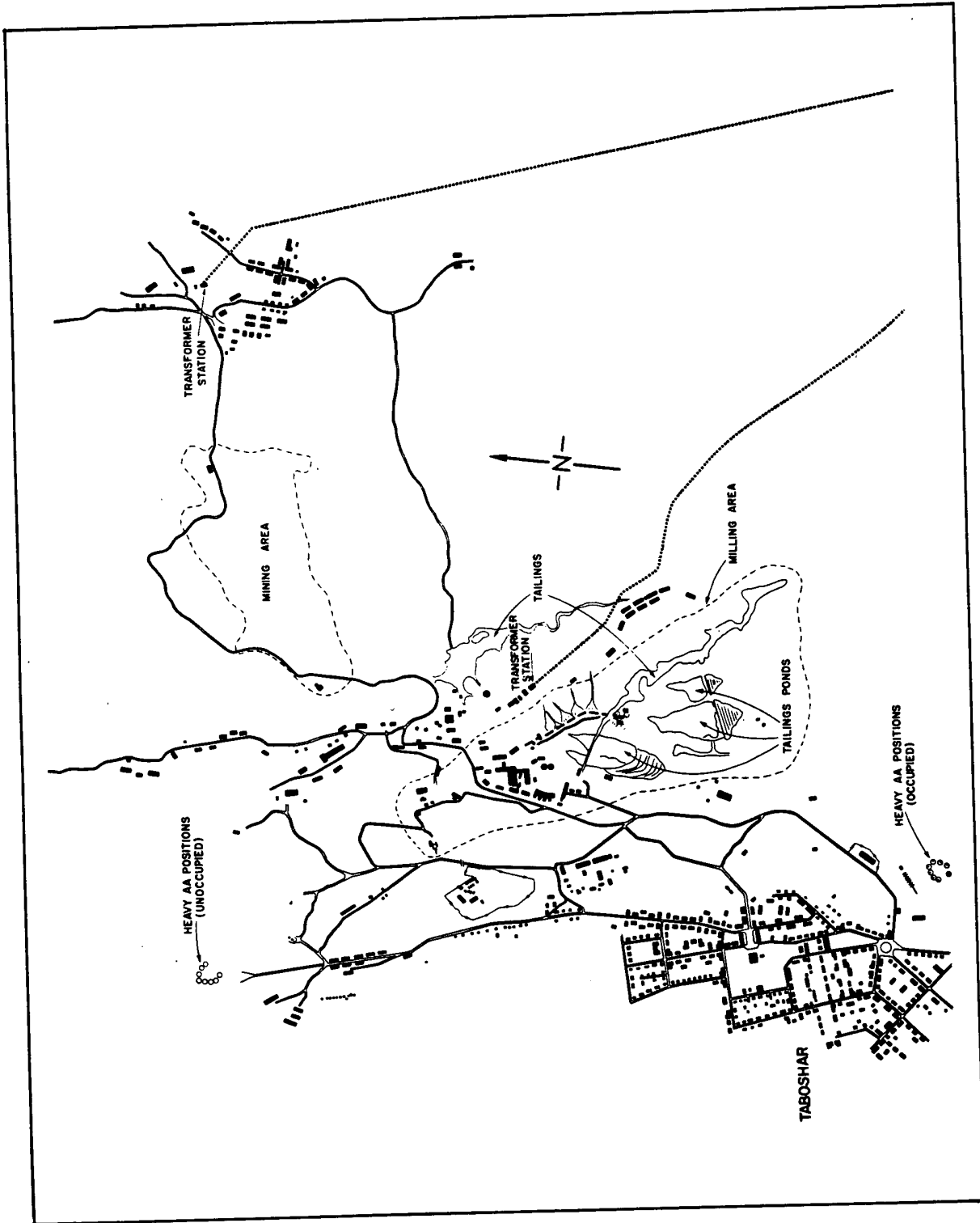
1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60  
61  
62  
63  
64  
65  
66  
67  
68  
69  
70  
71  
72  
73  
74  
75  
76  
77  
78  
79  
80  
81  
82  
83  
84  
85  
86  
87  
88  
89  
90  
91  
92  
93  
94  
95  
96  
97  
98  
99  
100

FIGURE 115

Taboshar mining and milling complex, August 1957.

SECRET

SECRET



- 230 -

SECRET

**Page Denied**

Next 19 Page(s) In Document Denied

SECRET

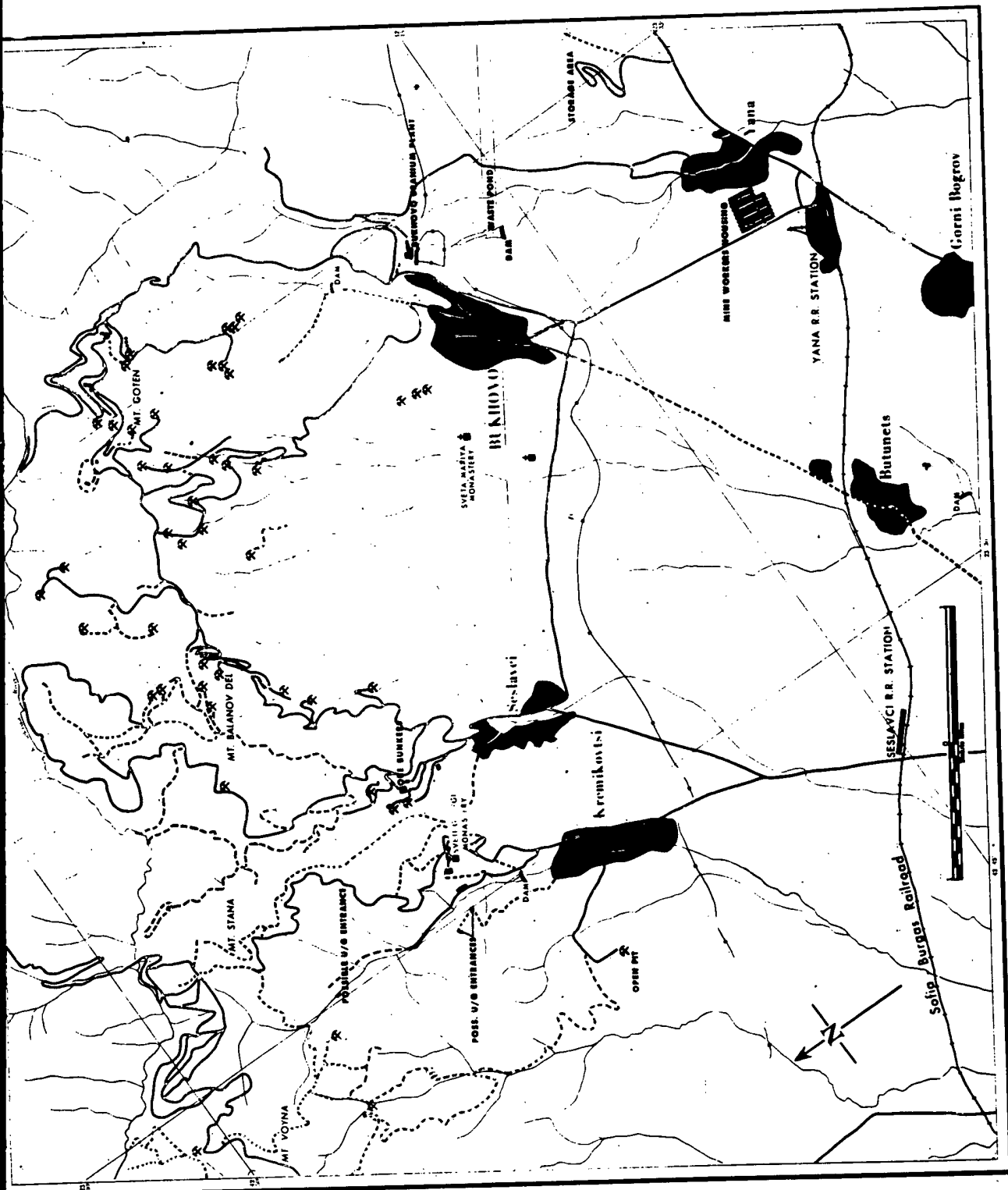
FIGURE 126

Bukhovo mining and milling complex, December 1956.

- 251 -

SECRET

SECRET



- 252 -

SECRET

**Page Denied**

Next 3 Page(s) In Document Denied



SECRET

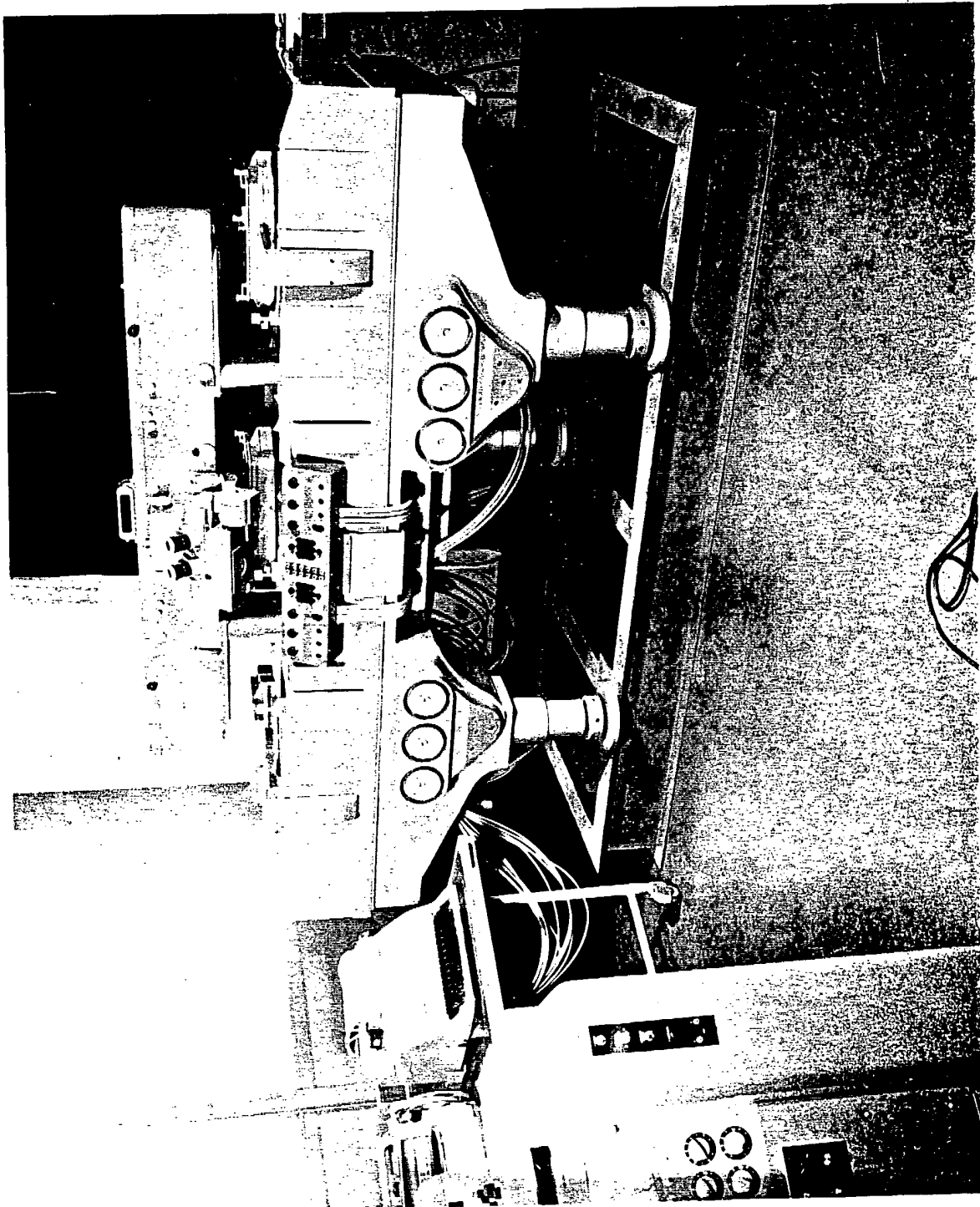
FIGURE 129

The Nistri TA-3 Stereocomparator. This instrument, which weighed 2963 pounds, was set on a special base fabricated by the Arlington Iron Works. The Telecordex unit, part of which is visible in the lower left hand corner of the photo, was not used with the Nistri. Probably it was hooked up with a Mann comparator which was located near the Nistri.

- 257 -

SECRET

SECRET



- 258 -

SECRET

**Secret**

*CIA Internal Use Only*

**Secret**