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**PHOTOGRAPHIC INTELLIGENCE MEMORANDUM**  
**POSSIBLE MICROWAVE COMMUNICATIONS**  
**AKTYUBINSK TO TASHKENT VIA TYURA TAM**  
**AND**  
**STALINGRAD TO KAPUSTIN YAR/VLADIMIROVKA**



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**HTA/M-15/58**

**DECEMBER 1958**

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POSSIBLE MICROWAVE COMMUNICATIONS  
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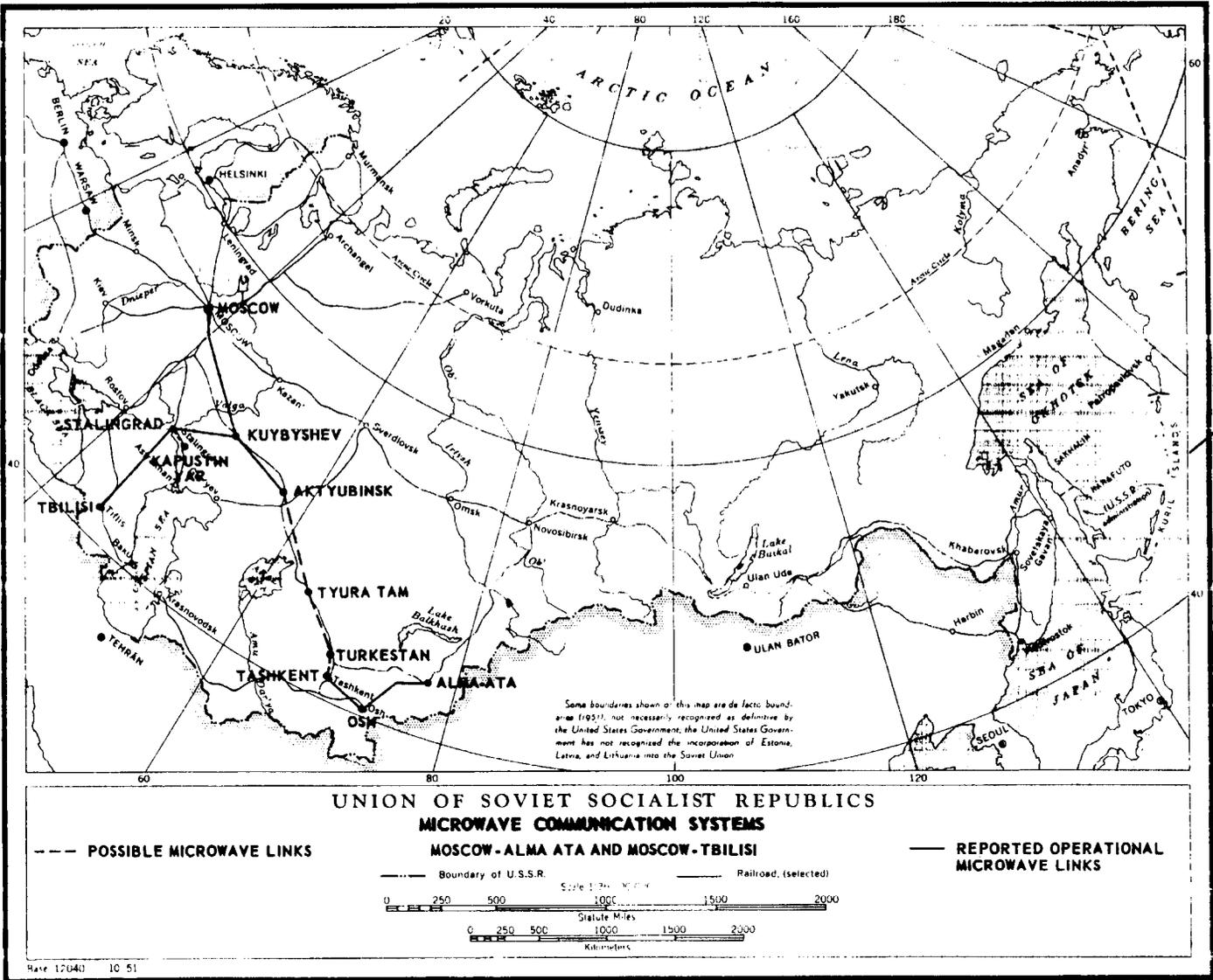
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POSSIBLE MICROWAVE COMMUNICATIONS  
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I. INTRODUCTION

This memorandum presents an interpretation of August and September 1957 photography in an effort to substantiate the existence of microwave communication links between Aktyubinsk and Tashkent via the Tyura Tam Missile Complex, and to determine whether a microwave communication link exists between Stalingrad and the Kapustin Yar/Vladimirovka Missile Complex. Both photographic and collateral evidence of facilities which may comprise elements of these two links are discussed below.

II. POSSIBLE MICROWAVE COMMUNICATIONS BETWEEN AKTYUBINSK AND TASHKENT

Microwave communication facilities are reported to be in operation between Moscow and Aktyubinsk, 1/ 2/ and between Tashkent and Alma Ata. 3/ A proposed Moscow to Tashkent microwave communication system has also been reported, 2/ but there has been little evidence from collateral sources indicating the existence of the 750 nm link between Aktyubinsk and Tashkent, which would comprise a part of this system.

Eight self-supporting lattice towers or guyed masts (items 1 through 8, Figure 1) spaced at intervals of 10 to 50 nm along the Aralsk/Tashkent rail line, from the vicinity of Novokazalinsk to a point 38 nm southeast of Kzyl Orda, have been identified on August 1957 photography. These towers or guyed masts could support microwave equipment and may constitute a portion of the Aktyubinsk/Tashkent link. However, identification of microwave dishes on towers is extremely difficult on photography of this scale. Two other towers (items 9 and 10, Figure 1) which could also be

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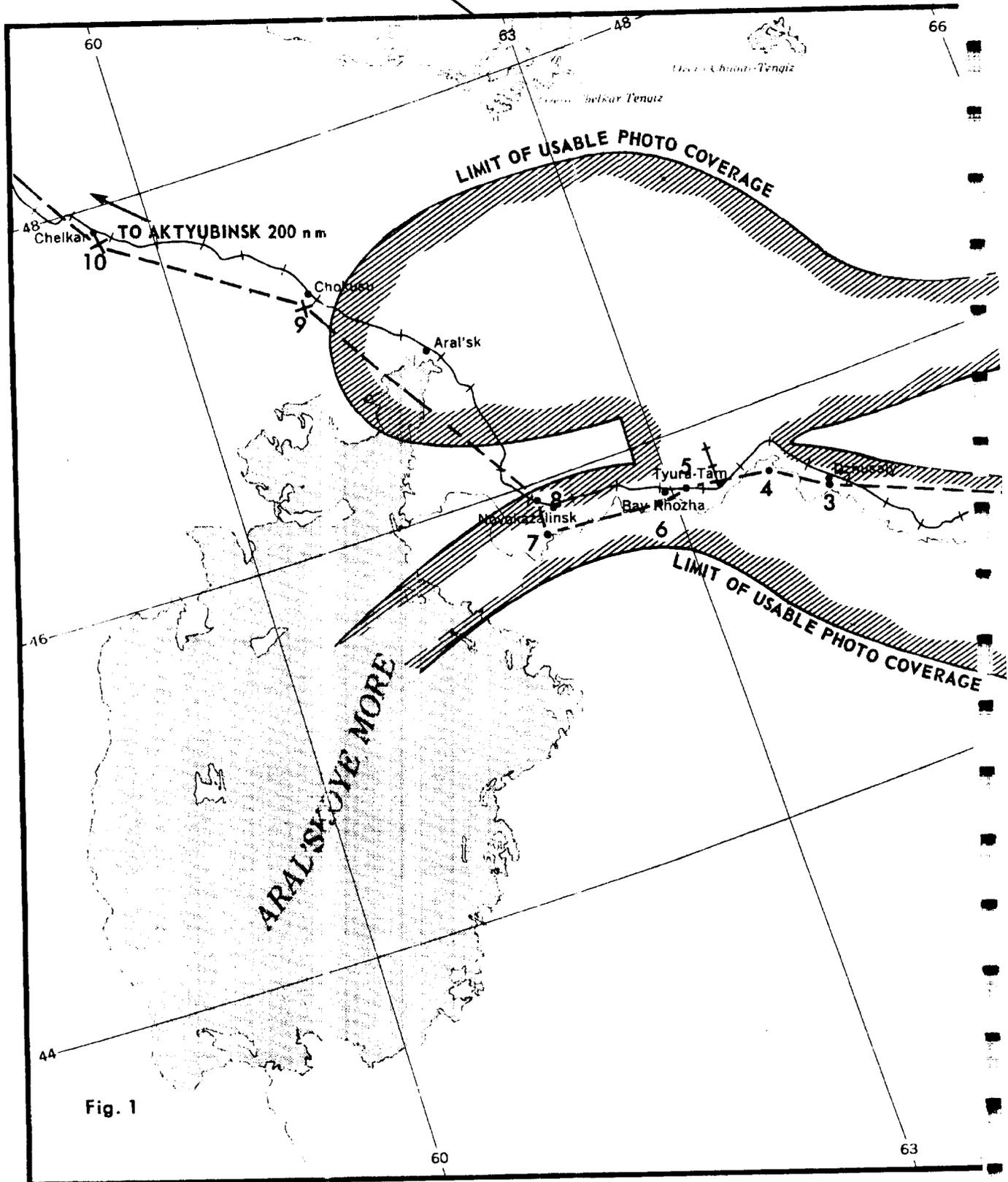
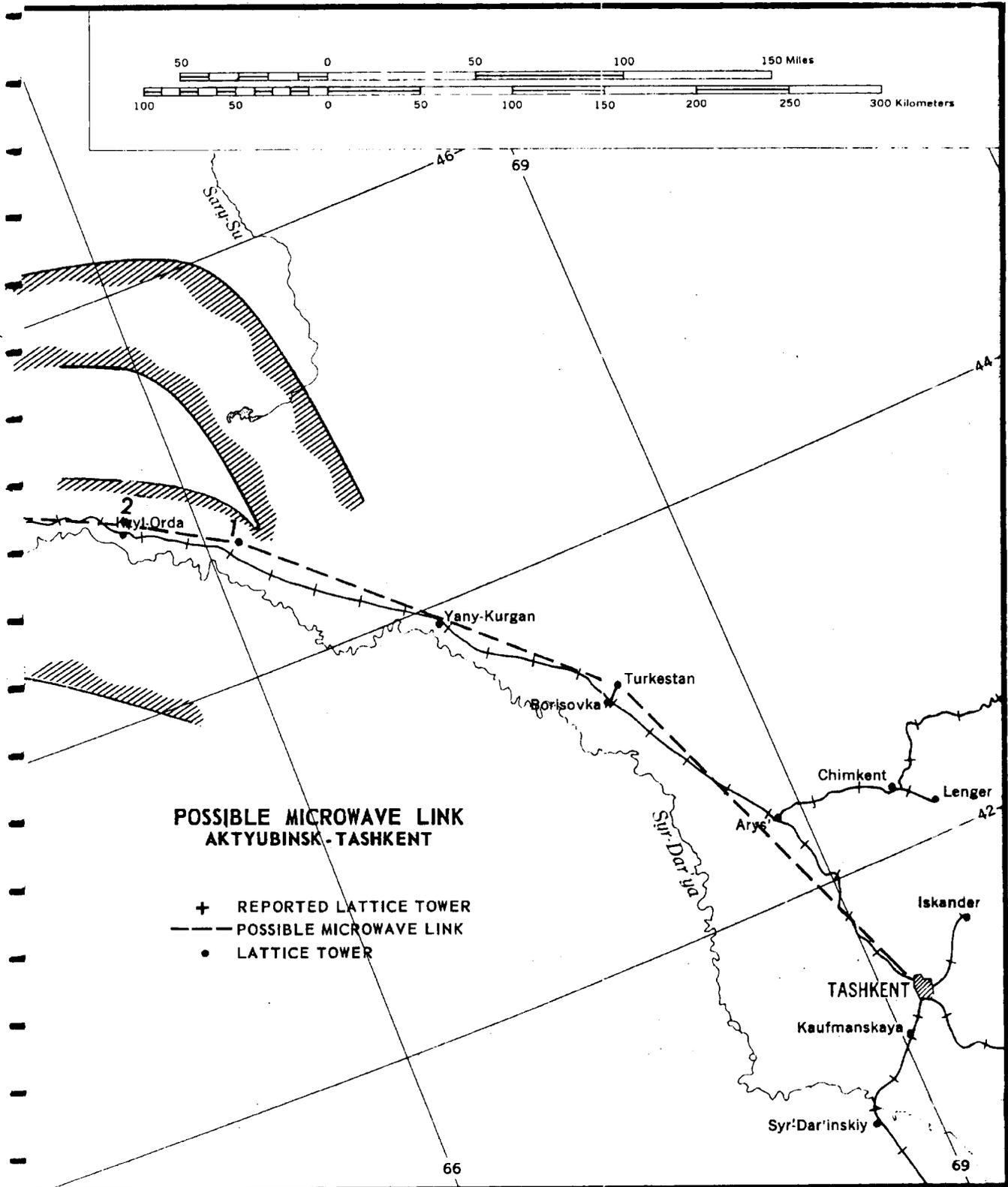


Fig. 1

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part of the Aktyubinsk/Tashkent link have been reported by ground observers in the area north of the Aral Sea. 4/ 6/

These 10 towers or masts are discussed in detail as follows:

No. 1. A large unidentified installation is located at  $44^{\circ}02' N/66^{\circ}17' E$ , 38 nm southeast of Kzyl Orda and one nm northeast of the Aralsk/Tashkent rail line. One of the facilities at this installation is a 295-foot self-supporting lattice tower with an approximately  probable dome-shaped object on top. The lattice tower could support microwave equipment as well as the probable dome-shaped object, but no microwave equipment can be identified.

No. 2. A possible guyed tower, 205 feet high, is located at  $44^{\circ}52' N/65^{\circ}33' E$ , two nm northeast of Kzyl Orda. No equipment or associated building can be identified.

No. 3. A probable communication station, consisting of a fenced area with nine guyed masts, a transmitter building, and three other unidentified buildings, is located at Dzhusaly ( $45^{\circ}27' N/64^{\circ}05' E$ ). Although no equipment can be identified, one of the masts could be used to support microwave equipment.

No. 4. A self-supporting lattice tower, 80 feet high, is located at  $45^{\circ}40' N/63^{\circ}43' E$ , 18 nm east of Tyura Tam and just south of the Syr Daraya River. No equipment can be identified and no buildings are within the immediate area.

No. 5. An 80-foot-high self-supporting lattice tower identical to tower No. 4 is located at  $45^{\circ}42' N/63^{\circ}02' E$ , 10 nm west-northwest of Tyura Tam and one nm north of the Aralsk/Tashkent rail line. No equipment or buildings can be identified.

No. 6. A 75-foot-high self-supporting lattice tower similar in structure to towers No. 4 and 5, is located at  $45^{\circ}45' N/62^{\circ}56' E$ , 8,600 feet west of Bay Khozha, between the Aralsk/Tashkent rail line and the Syr Darya River. No equipment or buildings are noted.

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No. 7. A self-supporting lattice tower, 65 feet high, is located at  $45^{\circ}48' N/62^{\circ}08' E$ , on the northeast edge of Kazalinsk, four nm south of Novokazalinsk. This tower appears to be set or anchored in a concrete base. No buildings are associated with the tower, and resolution of the photography precludes any possible identification of equipment on the tower.

No. 8. A self-supporting lattice tower 70 feet high, is located at  $45^{\circ}56' N/62^{\circ}04' E$ , six nm northwest of Novokazalinsk and 5,500 feet northeast of the Aralsk/Tashkent rail line. This lattice tower is located on top of a small knoll and appears to be similar in structure to towers No. 4, 5, and 6. No equipment or buildings are noted.

No. 9. A self-supporting lattice tower, 45 feet high, is reported from collateral sources to be located at  $47^{\circ}15' N/60^{\circ}59' E$ , one nm west of Chokusu and one nm west of the Aralsk/Tashkent rail line. 4/ No equipment or buildings were reportedly present at the tower or in the immediate area.

No. 10. A self-supporting lattice tower, estimated to be 125 feet high, is reported from collateral sources to be located at  $47^{\circ}42' N/59^{\circ}49' E$ , approximately 14 nm southeast of Chelkar and two to three nm south of Aralsk/Tashkent rail line. 6/ No mention is made of equipment or associated buildings.

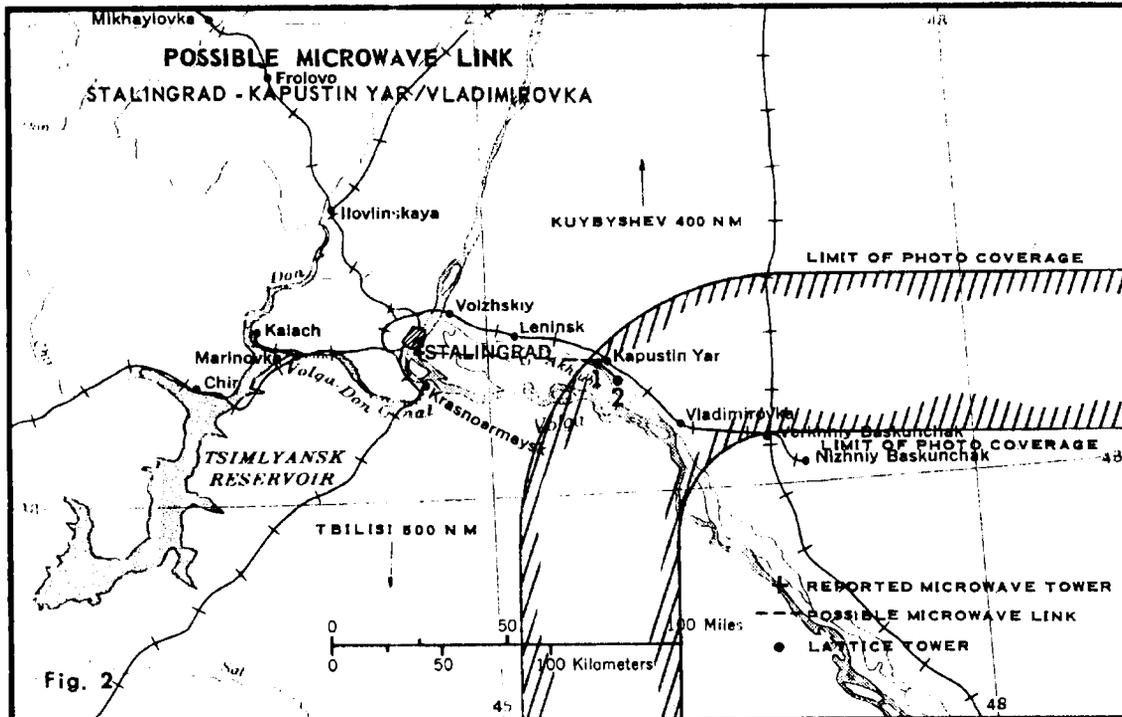
### III. POSSIBLE MICROWAVE COMMUNICATIONS BETWEEN STALINGRAD AND KAPUSTIN YAR/VLADIMIROVKA

A microwave communication system is reported to be in operation between Moscow and Tbilisi via Stalingrad. 3/ 5/ Two self-supporting lattice towers (Figure 2) appear on 1957 photography covering the Kapustin Yar/Vladimirovka Missile Complex. These towers could be part of a possible 50 nm microwave link connecting the Kapustin Yar/Vladimirovka area with the reported Moscow/Tbilisi system. Each of the towers is indicated on Figure 2 and the following text discusses each in detail.

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No. 1. A self-supporting lattice tower, 50 feet high, is located approximately 2,500 feet west of Kapustin Yar and adjacent to the Volga River floodplain. No buildings are located nearby, and the resolution of photography precludes identification of possible microwave equipment.

No. 2. A self-supporting lattice tower 40 to 50 feet high is located six nm southeast of Kapustin Yar, between the Kapustin Yar/Vladimirovka rail line and the Kapustin Yar/Vladimirovka highway. No buildings are located nearby, and the resolution of photography precludes identification of possible microwave equipment.

#### IV. CONCLUSIONS

The possibility that a microwave link may be under construction between Aktyubinsk and Tashkent is suggested by the presence of 10 self-supporting lattice towers or guyed masts along the section of the railroad between Chelkar and a point 38 nm southeast of Kzyl Orda.

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Paucity of coverage and limitations imposed by the resolution of available photography precludes determination of the existence of a possible Stalingrad to Kapustin Yar/Vladimirovka microwave link. However, the presence of two self-supporting towers in the Kapustin Yar/Vladimirovka Missile Complex could be part of such a link.

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REQUIREMENT: Prepared in answer to RR/HTA/E/R84/58 requesting a search for possible microwave communications serving the Tyura Tam and Kapustin Yar Missile Complex areas.

## PHOTO DATA:

<u>Mission</u>	<u>Camera</u>	<u>Prints</u>	<u>Date</u>	<u>Approx. Scale</u>
			Aug 57	
			Aug 57	
			Sep 57	

## MAP DATA:

WAC 235

WAC 246

CIA base map 12040, Oct 51

## SOURCE REFERENCES:

1. CIA/OCR/IR. (Unnumbered), Radio Relay and Microwave Observations From the Travel Folder Program (through July 1957). (S).  
(Maps and index)
2. Air, AFCIN-1A1. [redacted] 25 Nov 57. (U)
3. Air, AFCIN-1A1. [redacted] 14 Feb 58. (U)
4. OARMA, Moscow. [redacted], 8 Apr 58. (S)
5. Air, AFCIN-1A1. [redacted] 6 Sep 58. (S)
6. Air, Moscow. [redacted] 14 May 58. (S)

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