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INFORMATION REPORT INFORMATION REPORT

CENTRAL INTELLIGENCE AGENCY

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50X1-HUM

COUNTRY China/East Germany

REPORT

SUBJECT Planned Peiping-Sian Microwave Link

DATE DISTR. 19 November 1957

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REFERENCES

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SOURCE EVALUATIONS ARE DEFINITIVE APPRAISAL OF CONTENT IS TENTATIVE

the proposed Peiping-Sian microwave relay system [redacted] has been given the name "Objekt 307" in East Germany.

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- 2. Three types of buildings are planned to serve as relay stations in the proposed system. The three building types, though planned by the East German engineers concerned, will have to be constructed by the Chinese and are not considered in the price East Germany is charging China for goods and equipment. The East German government is, however, charging for the planning services given for the buildings. The three building types are called A, B and C.
- 3. The differences between the building types are:
  - a. The heights of the buildings - dependent on whether the relay station is located in a valley or on a mountain.
  - b. The construction material - either brick or concrete.
  - c. The protective angle (Schutzwinkel) - the angle which must be maintained between the micro-waves entering the buildings and exiting the buildings.
  - d. The mounting of the antennas. Some antennas can be mounted on antenna frames fastened directly to the buildings because the proposed system calls for five antennas which in the proposed system can be mounted on building frames with the correct alignment and which can be physically supported by the brick buildings. Because of the alignment problem some antennas in the proposed system will have to be mounted on antenna frames fastened to steel masts constructed next to, but independent of, the buildings. In the proposed system this applies only to some stations using building type B.
- 4. Since the Chinese have indicated they may, after the proposed system is constructed, want to expand the system by increasing the number of radio or telephone circuits or adding television, planning was also given to the mounting of the antennas in an expanded system. In an expanded system all

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(Note: Washington distribution indicated by "X"; Field distribution by "#")

INFORMATION REPORT INFORMATION REPORT

57

S-E-C-R-E-T

- 2 -

antennas will have to be mounted on independent antenna frames because either the brick buildings could not handle the increased weight or the antennas could not be correctly aligned if all were to be placed on the building frame. The exception is building type C, which is to be constructed of concrete.

5. In the table below, the following is indicated:
- a. Relay stations
  - b. Building type
  - c. Building construction
  - d. Building height in meters
  - e. Protective angle (schutzwinkel)
  - f. Antenna mountings, proposed system--on building frame
  - g. Antenna mountings, proposed system--independent frame.
  - h. Antenna mountings, expanded system--on building frame.
  - i. Antenna mountings, expanded system--independent frame.

A	B	C	D	E	F	G	H	I
1 B	B	Brick	15	40°	✓	✓		✓
2 A	C	Concrete	30	50°	✓		✓	
2	B	Brick	15	67°	✓	✓		✓
3	C	Concrete	35	76°	✓		✓	
4 A	B	Brick	15	55°	✓	✓		✓
5 B	C	Concrete	32	30°	✓		✓	
6 F	B	Brick	15	69°	✓			✓
7 F	A	Brick	15	12°	✓			✓
8 F	B	Brick	15	61°	✓	✓		✓
9 F	C	Concrete	32	22°	✓		✓	
10 F	A	Brick	15	33°	✓			✓
11 F	C	Concrete	70	19°	✓		✓	
12 A	B	Brick	15	47°	✓	✓		✓
13 A	A	Brick	15	28°	✓			✓
14 A	B	Brick	15	75°	✓			✓
15 A	C	Concrete	30	41°	✓		✓	

S-E-C-R-E-T

50X1-HUM

S-E-C-R-E-T

- 3 -

A	B	C	D	E	F	G	H	I
16 A	B	Brick	15	39°	✓	✓		✓
17 A	C	Concrete	50	19°	✓		✓	
18 A	A	Brick	15	20°	✓			✓
19 B	A	Brick	15	11°	✓			✓
20 C	B	Brick	15	49°	✓	✓		✓
21 F	B	Brick	15	89°	✓			✓
22 F	B	Brick	15	72°	✓			✓
23 F	A	Brick	15	25°	✓			✓
24 F	C	Concrete	50	20°	✓		✓	
25 F	C	Concrete	60	Sian	✓		✓	
26 F	Only a single room required							
			8x5 mts.					

6. In stations 1B, 2, 4A, 8F, 12A, 16A, and 20 C, antennas on one side of the building will be mounted on the building frame and on the other side on an independent frame. If the protective angle is less than 69 degrees; if the protective angle is between 69 and 90 degrees antenna mountings will be on the building frames.
7. In all cases where independent antenna frames will be required later, the foundations will be constructed with the proposed system.
8. The following sketch shows the installation plan for the batteries. Batteries are not needed for Peiping, 17A, and 25F. Akkumulator-batteries will be used, with 110 cells for 220 volts/288 amplituden (German). In height the batteries will be at least 2.20 meters. They will be installed on the ground floor of the buildings. See sketch on page 4.

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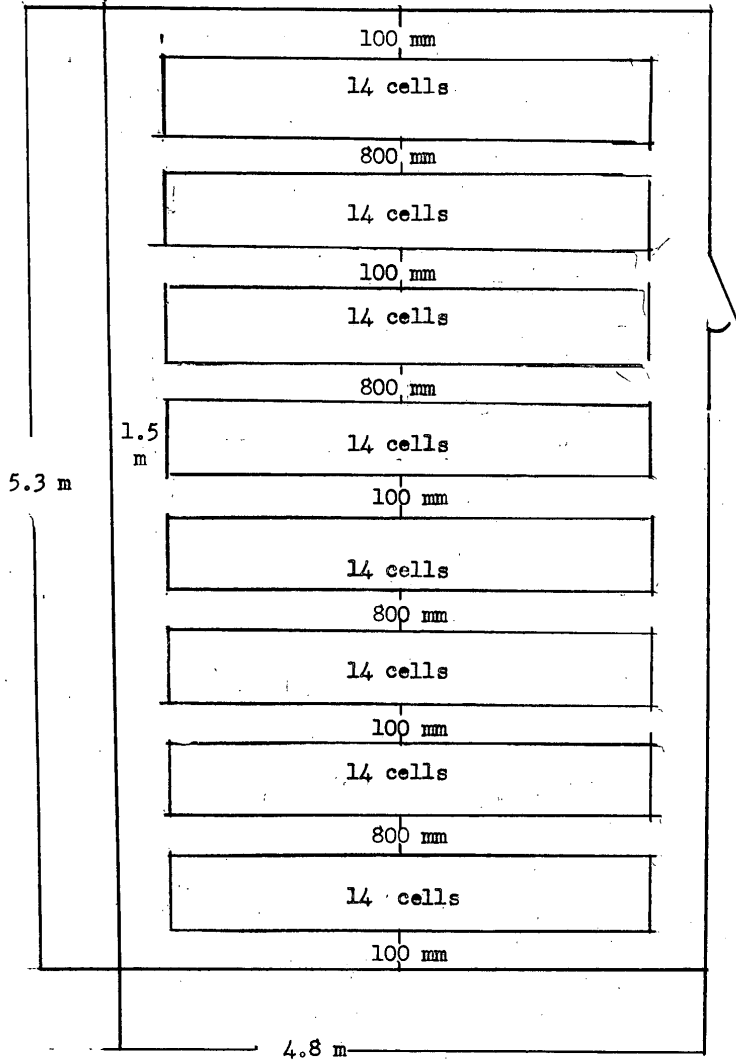
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S-E-C-R-E-T

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- 4 -

Sketch A  
Installation Plan for the Batteries



9. The following documents relating to the proposed microwave system have been deposited in and are available from the Library:
  - a. Sketch of housing for diesel plant.
  - b. Exterior sketches of building type A.
  - c. Cross section sketches of building type A.
  - d. Sketch of antenna arrangement for type A.

S-E-C-R-E-T

50X1-HUM

S-E-C-R-E-T

- 5 -

50X1-HUM

- e. Sketch of equipment room for type A, B, and C. Dimensions for equipment room for type B are not available, but the scale for type B is the same as for type C.
- f. Cross-section sketches of independent antenna frames for type A for the expanded system.
- g. Sketch of antenna arrangement for type B for proposed system.
- h. Sketch of antenna arrangement for type C for proposed and expanded system.
- i. Top view of placement of relay station 18A showing placement of type A and antenna frame foundation for the expanded system.
- j. Top view of placement of relay station 16A showing placement of type B and antenna frame foundations for the expanded system.
- k. Equipment list for RVG-903 and RVG-955.

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