CENTRAL INTELLIGENCE AGENCY

INFORMATION REPORT

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REPORT [redacted] 50X1
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[redacted]

IDENTIFICATION OF INSTITUTE

1. Five or six times during a period of two months in the winter of 1948 - 49 [redacted] an institute on the eastern side of Moscow together with FOGY and SPIEGEL [redacted] no one else accompanied us on these trips except, of course, the Soviet chauffeur. The purpose of the trips was to give advice and suggestions to the Soviet technicians at this institute concerning pulse position modulation communication equipment under development here. 50X1-HUM
[redacted] a sketch of this institute and its environment to the best of my memory (see page 7) 50X1-HUM
[redacted] 50X1-HUM
[redacted] this institute was

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was about 20 cm. and the RF tubes in both receiver and transmitter were metal-ceramic tubes. [redacted] one was of the LD type (LD-9). A sketch of the antenna, with approximate dimensions, is shown [see page 10]. 50X1-HUM

10. A few of the specifications of this equipment were as follows: (a) audio reproduction, 300 - 3000 cycles/second, (b) filter cutoff frequency, 3300 cycles/second (well cut off at 4000 to avoid images), (c) output of the low frequency channel, 1 neper (d) input to the low frequency channel, 2 nepers (e) pulse rate, 96 kilocycles/second before time division, (f) pulse width, 1 microsecond (g) pulse position shift, 1.5 microseconds with 100 per cent modulation.

11. The equipment was being ruggedized for truck mounting. [redacted] sketches showing the mounting plan in trucks. [redacted] placed along the sides of a covered truck in order to have an operating space in the middle of the truck. The antenna was to be mounted on a mast along side the truck. [redacted] a pipe mast was to be used. A telescoping mast was discussed, but [redacted] if the Soviets could make a good telescoping mast because of the machining and lubricating problems involved. 50X1-HUM 50X1-HUM

EQUIPMENT AT INSTITUTE 20

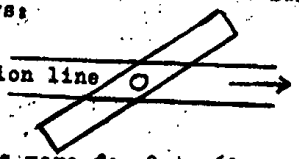
12. [redacted] the Institute building by the back door [see page 7] [redacted] were met by LIPPSMAN and escorted to his laboratories. The building was new, perhaps ten years old. [redacted] mounted a spiral stairway soon after entry and proceeded down the corridor of the third floor to a control station, then into the laboratories [see page 11]. [redacted] never in any rooms other than those shown [see page 11]. 50X1-HUM 50X1-HUM 50X1-HUM

13. [redacted] LIPPSMAN was not in charge of the entire institute. His work was confined to the laboratories [see page 11]. These laboratories occupied only about 5 per cent of the floor space in the institute. 50X1-HUM

14. NII-20 had more test equipment and was better equipped in all ways than NII-160. [redacted] The laboratory work-shop was well equipped with shapers, lathes, drill presses, precision drills, punch presses and a full outlay of work-shop equipment. Only one machine of each type was available, but all types were there and appeared to be of good quality. The low frequency work was done in the two laboratories nearest to the work-shop. These rooms were arranged with work-benches (four or five in each room) in the center of the rooms, test equipment on elevated shelves, and work space on 50X1-HUM

either side of each bench. Next to the low frequency laboratories were two centimeter laboratories. No particular arrangement of these rooms was evident and equipment was scattered throughout the rooms. Across the hall was LIPPSMAN's office and a row of design rooms. The drafting work was done in these design rooms. drawings of the antenna there and pieces of it in the shop. 50X1-HUM

15. all of the test equipment had been built at the institute. a standing wave ratio meter, many attenuators, decimeter signal generators and many slotted lines. The SWR (Standard Wave Ratio) meter was very simple, consisting of one directional coupler of the cross type with an absorber in one end and a detector in the other end of the cross member. Only a minimum SWR could be produced, and no actual SWR value was possible with this instrument. The SWR meter is shown schematically as follows: 50X1-HUM



The slotted lines were for 8 to 60 cm. wavelengths, judging by their length. Many minor pieces, including oscilloscopes and low frequency generators, were on hand. These minor pieces appeared to be copies of American equipment.

16. LIPPSMAN also said that all the items for their research were produced at the institute. This is typical Soviet policy. bakelite and iron carbonyl cores, condensers, chokes, quartz crystals (from natural quartz), and coils with pressed powder coils were made at this institute. These items were redesigned and often rebuilt within a week's time. The quality was good, about the same as German quality, but not as uniform. the Soviet-made parts were larger and heavier than necessary. Engineers in Germany always try to miniaturize, but in the USSR enlargement is emphasized. 50X1-HUM 50X1-HUM

CALIBER OF PERSONNEL AT INSTITUTE 20

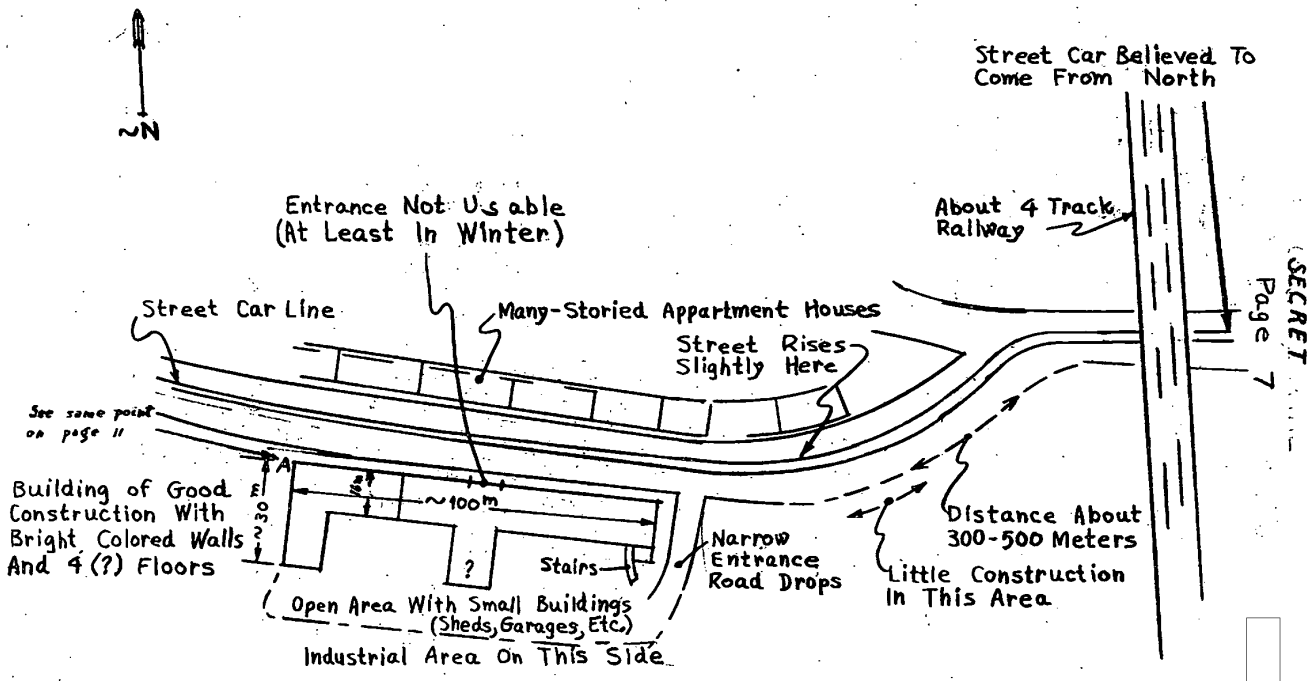
17. saw about twenty people, all under LIPPSMAN's direction, in the laboratories (see page 11). Most of the people in the laboratories wore white laboratory smocks so whether any of them had on military uniforms or not. 50X1-HUM 50X1-HUM

18. the names of any of the people in LIPPSMAN's department. One of his best assistants was a woman. She came to NII-160 for about two weeks during the construction of a special oscilloscope which had been requested by LIPPSMAN for their 50X1-HUM

decimeter relay work. FLEISCHER [redacted] was doing the construction. She also accompanied LIPPSMAN on several of his visits to NII-160. 50X1-HUM

19. The Soviet engineers at NII-20 were capable and would probably have achieved the same or equivalent results, in a little more time, without the assistance of the Germans. Of the twenty Soviet technicians in LIPPSMAN's laboratory, perhaps only four had academic training, while the other sixteen were of the technician level. All were quite young, and LIPPSMAN himself was not over 30 years of age. No more than four of the twenty were women. [redacted] women comprise 30 per cent of Soviet technical personnel. 50X1-HUM

20. The NII-20 personnel were better qualified technically than those at NII-160 and were paid better salaries, perhaps 40 or 50 per cent higher. LIPPSMAN [redacted] salary; [redacted] was about 50 per cent higher than a comparable position at NII-160. LIPPSMAN said that NII-20 personnel also received higher bonuses. The salary differential may be because of the military potentiality of NII-20 work. 50X1-HUM



AREA SURROUNDING INSTITUTE 20 IN MOSCOW

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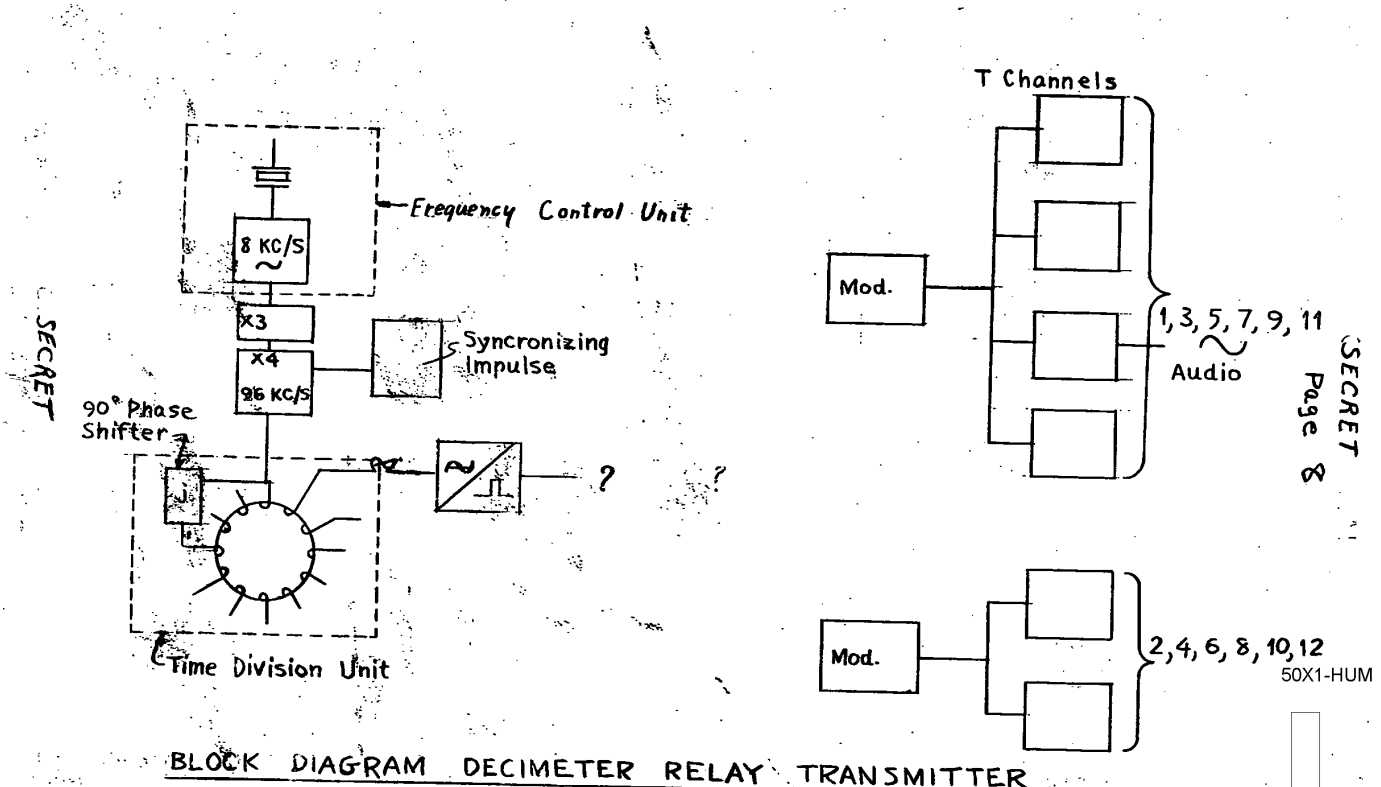

BLOCK DIAGRAM DECIMETER RELAY TRANSMITTER

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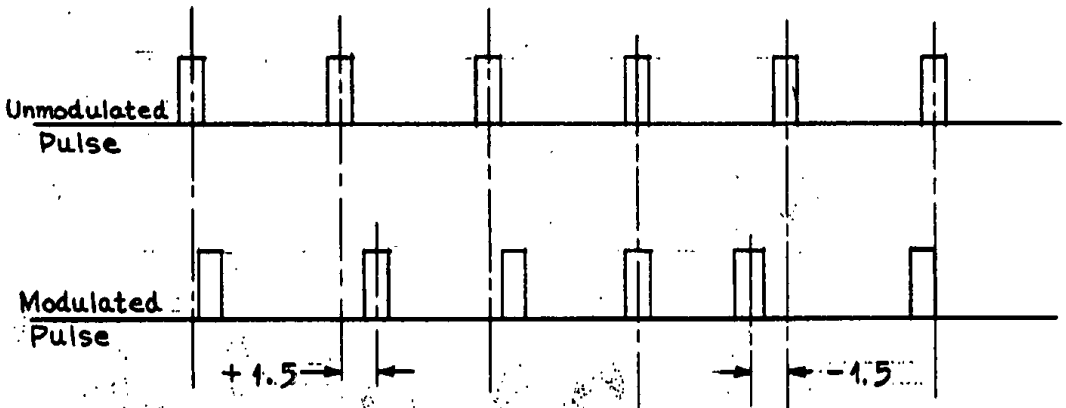
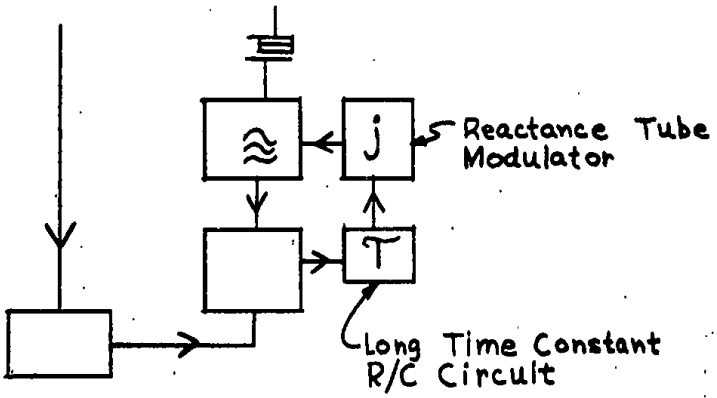


Maximum Pulse Displacement — ± 1.5 Mic. Sec. For 100% Displacement

PULSE TIME CHART



DETAIL FREQUENCY CONTROL UNIT

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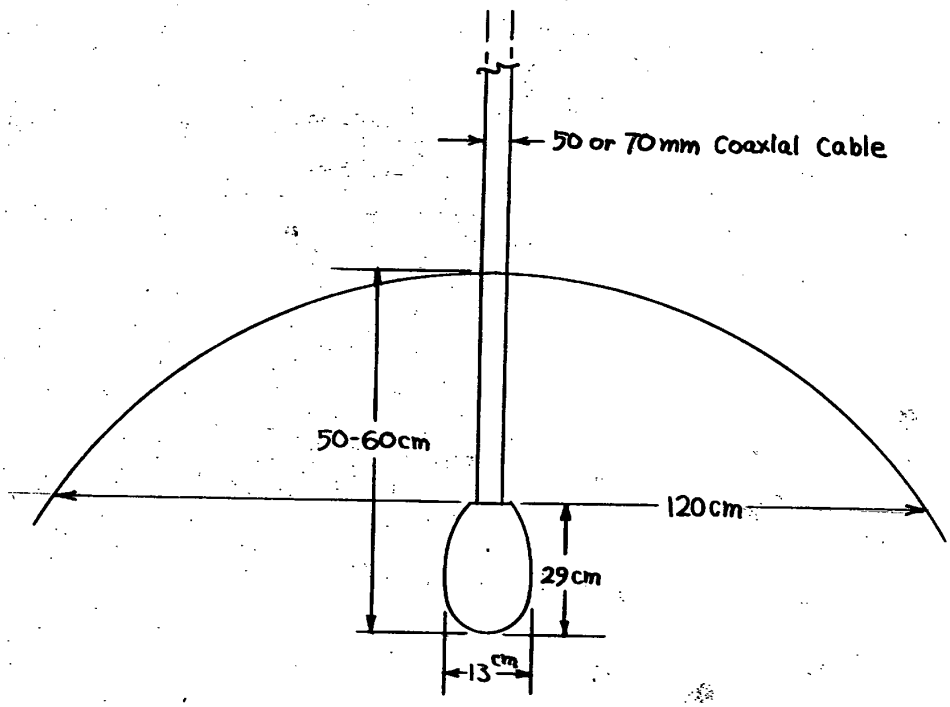
ANTENNA FOR THE DECIMETER RELAY EQUIPMENT



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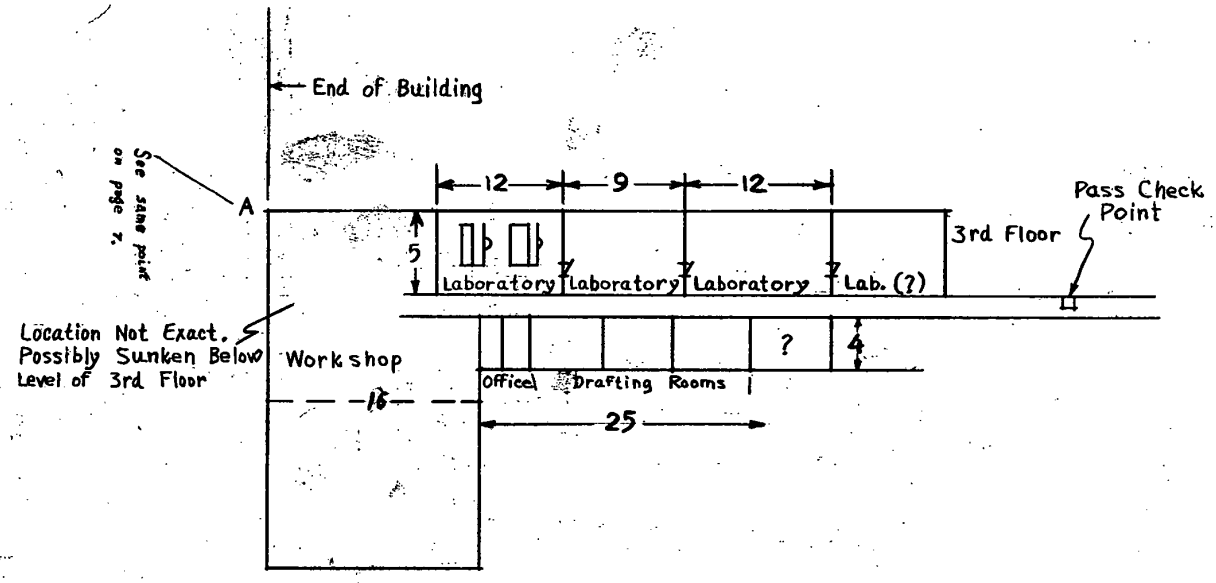

DECIMETER RELAY EQUIPMENT LABORATORY AT NII 20

ALL DISTANCES IN METERS

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