TOP SECRET SUEDE SECURITY INFORMATION
U. S. EYES ONLY

7 January 1952

[redacted] CONFERENCE

EO 3.3(h)(2)
PL 86-36/50 USC 3605

Part I. The Chronology of Events.

[redacted]

Part II. The Devices Discussed.

1. The [redacted]

The [redacted] is a random key generator. Basically it produces random binary digits. An irregular alternating current when below a certain threshold activates the firing of a two stage thyratron tube, which changes its stage every two microseconds. The period of this alternating current is about 50 microsecnnds and 35 periods are used to produce one binary digit, this being determined by the final stage of the thyratron tube. Five consecutive digits are used to form one of the 32 Baudot characters. In the machine this is accomplished by the setting of a "pyramid" (what we call a "Christmas tree") of relays and these send impulses through a wire which is plugged to an electric typewriter. A second key generator of the same type in the machine uses the digits to control the punching of a 5-level tape. Thus the machine contains two independent key generators, one to produce tape, the other to operate an electric typewriter. These can both be run simultaneously. Counters are attached to both outputs and record the results. By setting switches on the machine, various combinations and suppressions of the 32 characters can be used to control the printer. For producing digits two of the 32 characters are suppressed and the rest are combined in ten sets of 3 to print digits. For producing letters 6 of the 32 are suppressed. In addition the printing can be controlled to produce groups of 4 or 5 characters, and spacing between characters between groups, between lines, and between pages can be varied. Suppressions can be made in further ways. In order to produce three letter call sign groups the letters Q and Z can be suppressed in the first position and the group SOS also suppressed. Random alphabets may be produced by suppressing each letter after its first occurrence. It takes on an average 22 seconds to produce a random alphabet in this way. By spacing properly this may be used to prepare reciprocal alphabets or stecker pairings.

2. The Automatic Device.

This is simply a device for combining two tapes for on-line transmission. It appears to be the same as the SIGTOT device, of whose existence the [redacted] They seem to feel that this is a very valuable invention from a commercial standpoint.

3. The Wired Wheel Ciphering Device.

This device is to use 10 wired wheels. Encipherment is to be in one direction through 5 of the wheels, the other 5 controlling the stepping. There are to be no pluggable features. The similarity to the ECM was noticed by us, but no comment was made to this effect. It is conceivable that this is an independent discovery of the ECM principle [redacted]

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4. The Low Echelon Enciphering Device.

This is to be a device which slides two random alphabets against each other.

5. The Ciphony Device.

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The discussion of this was on very general terms, [redacted] mentioning time delay, noise addition, inversion, and other known principles of enciphering sound. He was endeavoring to produce a device which would give the most faithful possible reproduction of the sound. The only real novelty mentioned was a method of recording sound magnetically on a disc using some new coating. This was alleged to be vastly superior to magnetic tape.

Part III. Incidental Intelligence.

[redacted]

Part IV. Recommendation.

[redacted]

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