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~~18 December 1957~~MEMORANDUM FOR THE RECORD

SUBJECT: Hagelin Negotiations

1a. After Mr. Barlow left Stockholm to visit the Hagelin Laboratories in Zug, Mr. Hagelin urged that I visit ^{to, the Laboratories} ~~him~~ in Zug as soon as convenient, ^{not only.} for the purpose of continuing our talks with regard to the "Gentlemen's Agreement" and also to see the progress that had been made in the development of ^{his} new apparatus. Accordingly, after spending a few days on holiday in Scandinavia, I proceeded to Frankfurt for preliminary talks with the Chief ^{of} of NSAEUR and ASAE to ascertain what late information was available concerning developments ^{in Europe and especially in} in Germany in the cryptologic field which might have a bearing upon the talks which would later ensue between myself and Mr. Hagelin. The information gleaned from ^{the} ~~this~~ conference with the aforementioned personnel turned out to be quite useful in my talks with Mr. Hagelin. After a few days holiday with friends in Frankfurt, on 22 September I proceeded to Zurich where I was met at the airport at 1800 hours by Mr. Hagelin, who took me to Zug by automobile. Mr. Hagelin insisted that I be his house guest, which necessitated cancellation of a hotel reservation which I had made. After dinner we had a brief talk among which the following were the principal items of concern:

b x. He astonished me by handing me a copy of U.S. Patent No. 2,802,047, issued on 6 August 1957, on an "Electric Switching Device for Ciphering Apparatus". A copy of this patent is attached.

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as Exhibit I. The reason for my astonishment was that this patent covers the re-entry principle in electric rotor machines, a principle first thought of, at least in the U.S., some time in 1940. It was conceived by Mr. Albert Small in connection with the efforts of the Army Signal Intelligence Service to solve the Japanese highest level diplomatic cipher machine (the so-called "Purple"). The idea had, at my insistence, been written up, an application for patent thereon had been filed, and the application and all papers connected therewith in the Patent Office had been placed in secrecy. So far as I am aware, this application is still in a secrecy status, ~~and~~ and according to U.S. Patent Law, the Patent Office should not have issued any patent on the re-entry principle and mechanism therefor without going through the mechanics of a "declaration of interference". It is probable that there was a slip-up in the U.S. Patent Office and this will have to be investigated. This phase of the matter has been turned over to Mr. Stauffer, Patent Counsel, Office of Research and Development. Naturally I did not disclose to Mr. Hagelin that we had a real interest in the re-entry principle or that an application for a patent thereon was pending in the U.S. Patent Office and was in secrecy status. He did make a comment to the effect that even though he had the patent, he was pretty sure that he could not obtain royalties from the U.S. for its use. I thereupon asked him what made him think ^{had used or} we are using such an idea and his reply was something to the effect that he assumed that we too would have thought of such a neat and simple thing long ago. He went on then to add, with a smile, that his application for a patent on this re-entry principle, filed in

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Japan at the same time ^{that} ~~as~~ it was filed in the U.S. (October 1953) had been rejected by the Japanese Patent Office. At this writing I think Mr. Hagelin's patent is broader than the U.S. application in that his covers the situation

^{briefly referred to a}
Cont. Mr. Hagelin ~~mentioned a very important~~ decision which had very recently been handed down by the Bonn Government to the Siemens Company with regard to the ^(OTT) sale of one-time-tape teleprinter cipherring apparatus. The Bonn decision permits the Siemens Company to sell their aforementioned apparatus to all customers except the Soviet Union and ~~the~~ Satellites thereof. I went into this in ~~much~~ greater detail ⁱⁿ subsequent conference with Mr. Hagelin and this report will deal with this ^{subject} later on.

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it emerged at a contact-point on the output stator.

e. There was considerable detailed information from him about the radiation studies which had been made by the Siemens Company and which was reported ~~on~~^{by} in Mr. Barlow ~~in~~^{in his} trip report. I deliberately asked Mr. Hagelin to tell me about these studies, as though I had not heard about them already from Mr. Barlow.

f. He had heard several times about complaints of NATO users of the U.S. AFSAM-7 machines. Mostly, he said, operational failures were due to dirty contact surfaces on the rotors. This comment, incidentally, was a repetition of an identical one made by an old friend, a Captain in the U.S. Navy, who is on duty with Allied Forces in Northern Europe (AFNE) and whom I visited in Oslo just before going to Zurich, and by a Navy Communications Security officer in SACLANF HQ in London.

g. Mr. Hagelin told me in some detail of the deterioration in his business and social relations with his son Boris, Junior, in Washington. Later I learned from Mrs. Hagelin that their poor relations with their son began soon after the son's marriage apparently because of in-law/daughter-in-law incompatibility. I was to learn more about this later, too.

2. The next day, Monday 23 September, was spent in friendly chatting with Mr. Hagelin, in the course of which the following items of information were learned or discussed:

a. He once again referred to his "re-injection" patent, this time with some pride in accomplishment or achievement, so that it was obvious that he wanted to talk about it some more. I therefore

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asked how he happened to think of, or hit upon, the idea of "re-injection"; whereupon he told me: In 1952 he'd been to Bonn and had seen Dr. Huettenhain et al (he referred to the group as "Die Studien Gesellschaft ~~of~~ ⁱⁿ Bonn"), and that during this visit Dr. Huettenhain had said something in regard to

[REDACTED]

Mr. Hagelin told me that he wondered how this was possible but he did not ask Dr. Huettenhain to explain. When he returned to Zug he began to ruminate and to think about this point; he made sketches and drawings, but couldn't figure out how one could do such a thing as Dr. Huettenhain had mentioned. Finally, he showed his drawings to his Chief Engineer, Stürtzinger, who immediately said: "You can do it by

[REDACTED]

Mr. Hagelin said that he didn't quite understand what Stürtzinger meant by

[REDACTED]

It developed, Hagelin said, that this was exactly what Stürtzinger had in mind, but Hagelin was careful to tell me that he'd thought of this neat trick by himself and before Stürtzinger could explain what he meant by the word

[REDACTED] in this instance. I then took up Mr. Hagelin's last-night's reference to the fact that he failed to obtain a patent in Japan on his idea: "How was it that the U.S. Patent Office cited ^a ~~the~~ Japanese patent against you and still gave you a U.S. patent on

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your 're-injection' circuitry?" He replied: "The Japanese patent wasn't cited by the U.S. Patent Office; it was cited by the Japanese Patent Office itself when my application was filed in that country". I asked Mr. Hagelin if he could give me the Japanese patent number and he courteously supplied me not only with that information but also with a copy of the Japanese patent. (Exhibit II, attached hereto.)

b. We talked again about the Bonn decision mentioned above in paragraph 1^c. Mr. Hagelin stated that he had recently visited the Siemens people in Munich in connection with their sale of one-time-tape cipher teleprinting machines. (Apparently the occasion for this visit was to tell them that he had heard of their sales of such equipment to certain countries which he thought were ^{already or new} iron-curtain countries, or were inclining in that direction.) He told them he wanted to find out whether there was any basis for these stories. It was then that he learned from them of the Bonn decision to allow Siemens to sell their OTT teleprinter equipment to all countries except the U.S.S.R. and its satellites. Mr. Hagelin told me that he expected to follow suit. I thereupon asked him when or under what circumstances a country is to be regarded as a satellite of the U.S.S.R. How about Egypt? Or Syria? Or certain other Middle East countries? He shrugged his shoulders and asked me in turn "How indeed? I don't know the answer to that. But of this I'm sure as regards Siemens: They've ^{already} sold some of their OTT teleprinters ^{to certain governments.} ~~to Egypt.~~ ~~And I think they've sold some to Jugoslavia."~~ When I expressed some astonishment at the sale to Jugoslavia he said:

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