

WAR DEPARTMENT
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 OFFICE OF THE CHIEF SIGNAL OFFICER
 WASHINGTON

December 19, 1933

MEMORANDUM FOR: Major Akin.

With reference to the attached memoranda dated November 21, the following brief summary of the pro and con arguments is submitted:

A. Reasons for allowing patent to issue:

1. Protection of the government's rights and interests. Many inventors are working along identical lines, with cryptographs based upon similar principles of revolving cipher wheels. The policy has, so far as I know, always been to obtain patent protection under these circumstances so as to obviate the possibility that the government may, in the future, have to pay royalties for use, whether invented by government employees or by non-government employees who have conceived similar or identical devices at approximately the same date.

2. Protection of the inventors' rights and interests. The principles of the device have an important application in commercial and banking communications. It is understood that there is no desire or reason to interpose any obstacles to the gaining of such financial benefits as may accrue to the inventors, under existing law, unless there are valid reasons, on the basis of factors prejudicial to the government's interests (for example, national defense) for abandoning the patent; since it cannot, under existing law, be kept secret by preventing issuance.

B. Reasons for not allowing patent to issue:

1. Secrecy. Once issued, description and details of patent become public, so that all secrecy is destroyed.

Rebuttal: ~~This~~ argument presents two phases. (1) It is true that disclosure of the specifications and claims destroys secrecy, but only as regards the actual construction and manner of functioning of the device itself. It does not destroy the secrecy of messages enciphered by means of the device, which operates by variable keying elements. Even if an enemy government has one of the devices this would not assist in solution of the messages. As a matter of fact, in this

case technically there is no method known which can bring about solution. Only actual possession of the keys themselves can result in solution; the machine itself need not be in possession of the cryptanalyst.

(2) The other phases of the secrecy argument is that concerning aiding a potential or actual enemy government by disclosure of the patent. Granting the impossibility of solution, recognition of this fact may induce a foreign government to adopt the identical machine in its own service, thus giving him an extremely useful weapon for wartime employment, possibly against us.

Rebuttal: This is a valid argument and perhaps the most serious one. However, it rests upon the theoretical possibility of an occurrence and not upon a demonstrable, factual occurrence. It then comes down to a question of determining whether this possibility is great enough and sufficiently serious in consequences to justify jeopardizing the government's interests, as cited under A1 above. If the possibility is remote and not serious in consequences, then obviously there is no object to be gained in suppressing the patent in the immediate present and as a result jeopardizing the government's interest for many years. If, on the other hand, the possibility is imminent and serious in its consequences, the longer disclosure is delayed, the better. This is a matter for individual judgment and decision by higher authority. However, as regards the inventor's interests, it should be pointed out that suppression (or rather abandonment of the patent, which is what would be necessary) would deprive the inventors of rights that are accorded them under the law, unless they should be recompensed in some other manner.

William F. Friedman.