

6 August 1947

SUBJECT: Release of Patent Application Serial No. 443,320

TO: Deputy Chief, Army Security Agency

1. Inclosure 1 hereto is a copy of a memorandum dated 27 September 1945, from the undersigned, to the Commanding General, Army Security Agency, Subject: Release of Patent Application Serial No. 443,320. Inclosure 2 is a copy of a memorandum dated 20 May 1946 from the Chief, Army Security Agency, in response to Inclosure 1. Inclosure 3 is a copy of an ASA memorandum dated 10 April 1947, Subject: Procedure for Release of Information Concerning Secrecy Patents.

2. Information is requested as to whether or not the interpretation set forth in the last sentence of Par. 3 of Inclosure 3 may be applied retroactively and thus lead to a re-statement of Par. 2a of Inclosure 2.

3. It is also requested that the cryptanalytic status of the cryptographic principles disclosed in the subject Patent Application be ascertained and that I be advised as to whether or not the Application can be declassified so that it may then be processed to the point of issue.

4. In connection with the foregoing and with Par. 2b of Inclosure 2, it is my understanding that no patent applications were filed by ASA personnel to cover the cryptographic principles embodied in that version of Converter M-228 which is designated as Converter M-228(M), short title SIGHUAD, or in the later version which is designated as Converter M-294, short title SIGNIN, because the basic cryptographic principles in all three equipments are quite similar. However, it appears that Teletype Corporation, which developed and produced Converter M-294 for the Army under Government contract and under ASA direction, has filed three patent applications which cover certain features of that equipment and which are being held in a secrecy status, although none of them contains claims covering the cryptographic principles embodied in Converter M-294. However, the cryptographic elements and features of Converter M-294 are disclosed in one of these applications.

*William F. Friedman*  
WILLIAM F. FRIEDMAN

- 3 Incls:  
1. Memo dtd 27 Sep 45  
2. Memo dtd 20 May 46  
(with inclosure)  
3. ASA Memo dtd 10 Apr 47

Declassified by NSA/CSS

Deputy Associate Director for Policy and Records

On 20/30/42 RLP

*Inc. 1*

~~CONFIDENTIAL~~

27 September 1945

SUBJECT: Release of Patent Application Serial No. 443, 320

TO: Commanding General  
Army Security Agency

1. The subject patent application covers a cryptographic means and device for automatic encipherment and decipherment of teletypewriter signals and was filed in the U. S. Patent Office on 16 May 1942 in the name of the undersigned and Frank B. Rowlett, as co-inventors.
2. The principles involved in the subject application have been utilized in Converter M-228 and Converter M-294.
3. It is requested that the subject application be officially declassified in order that it may be allowed to go to issue, whereupon the right and title will revert to the undersigned and Frank B. Rowlett, subject to an irrevocable, non-exclusive, and royalty-free right and license remaining vested in the United States of America.
4. This action is desired because of the commercial applications of the invention, interest in which is believed to exist on the part of the U. S. communication companies.
5. Declassification of the patent application does not necessarily involve the declassification of the specific embodiments thereof represented in the apparatuses mentioned in paragraph 2.

WILLIAM F. FRIEDMAN

~~CONFIDENTIAL~~

Inclosure 1



~~SECRET~~

REF ID: A104726



HEADQUARTERS  
ARMY SECURITY AGENCY  
WASHINGTON 25, D. C.

WDGSS-23

20 May 1946

SUBJECT: Release of Patent Application Serial No. 443,320

TO: Mr. William F. Friedman, WDGSS-14

1. Reference your letter dated 27 September 1945, subject as above, the attached memorandum from the Acting Deputy Assistant Chief of Staff, G-2, outlines the War Department policy on the release of cryptographic principles.

2. Analysis of the policy would indicate that:

a. Patent application No. 443,320 will not be released unless it can be shown that the employment of the principles involved are susceptible to cryptanalysis under all circumstances; and

b. If not released, a request for purchase of all commercially exploitable reversionary rights may be entertained provided it can be shown that Frank B. Kowlett and yourself were not directed or employed to experiment on or to invent the principles or improvements embodied in Converter M-228 or Converter M-294.

3. If it is felt that subject Patent Application should be released under (a) above; or if and when it is felt a case should be presented for purchase of rights in conformity with stipulations contained in (b) above, an application for release or purchase, containing pertinent facts and necessary proofs, may be prepared and submitted to the Director of Intelligence through the Chief, Army Security Agency.

1 Incl  
Cy ltr dtd 29 Apr 46,  
subj: "Release of Cryptographic Principles"

*Harold G. Hayes*  
HAROLD G. HAYES  
Colonel, Signal Corps  
Chief, Army Security Agency

~~SECRET~~

INCLOSURE 2

~~SECRET~~

AS-70 AS-23 10 Apr 47  
 AS-80  
 AS-90

Procedure for Release of Information  
 Concerning Secrecy Patents

Lt. Chapman, Ext 462

1. All previous instructions pertaining to the above subject are rescinded.

2. Research Laboratories Division is charged with the primary responsibility for making recommendations related to the control and evaluation of all patents and patent applications affecting cryptologic equipment and processes. In view of the above, the following procedure will be adopted for the handling of requests relating to the release of patents held in secrecy:

a. If the request is received by Research Laboratories Division, comments and recommendation will be forwarded by AS-70 to AS-20 after coordination with AS-80 and AS-90.

b. If the request is received by the Deputy Chief, it will be forwarded to AS-70 who will coordinate with AS-80 and AS-90 and return comments and recommendation to AS-20.

3. Comments should include sufficient background material to determine that recommendation is in accord with current policy on release of cryptographic principles, a copy of which is attached. The last sentence of paragraph 1a of attached policy will be interpreted on the basis that the Army Security Agency could expect to solve communications which may be passed therein, assuming the device were to be used in a practical manner by adequately trained personnel and resulting in a normal military or commercial traffic expectancy.

1 Incl  
 Memo for Ch, ASA fr  
 ACofS, G-2 dtd 29 Apr 46  
 subj: Release of Cryptographic Principles

/s/ Harold G. Hayes  
 HAROLD G. HAYES  
 Colonel, Signal Corps  
 Chief, ASA

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AS-14  
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~~SECRET~~

WASHINGTON 25' D' C'  
 ARMY SECURITY AGENCY  
 HEADQUARTERS

COPY

ENCLOSURE 3



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JP

29 April 1946

MEMORANDUM FOR THE CHIEF, ARMY SECURITY AGENCY:

SUBJECT: Release of Cryptographic Principles.

1. The following policy is announced to be effective immediately:

a. Cryptographic principles or devices developed by officers, enlisted men, or civilians employed in any War Department Agency, or patents or patent applications on such principles or devices which are owned by, assigned to, or licensed for use of the War Department will not be released for use of foreign governments or for foreign or domestic commercial or private use until such time as necessary information is available and a procedure established in the Army Security Agency whereby information which is cryptographed by means of such principles or devices can be cryptanalyzed and read under any and all circumstances.

b. Where it is in the interest of the Government of the United States that an employee have no patent rights in cryptographic principles or devices to dispose of, and for the Government to own the entire interest for security reasons throughout any foreseeable future; and where discovery or invention of cryptographic principles or devices has been made by a civilian employee and does not relate to a matter as to which the employee was specifically directed to experiment with a view to suggesting improvements nor was produced as a result of any specific employment or contract to invent a specific device or article; and where an application for patent on such principles or devices has been filed with an assignment-in-trust to the Government for the purpose of maintaining such application in secrecy, the Military Intelligence Division will support, subject to the availability of appropriations, any reasonable request for purchase of all commercially exploitable reversionary rights of the inventor in the patent application.

/s/ CARTER W. CLARKE  
Colonel, GSC  
Acting Deputy A.C. of S., G-2

HEADQUARTERS  
ARMY SECURITY AGENCY  
WASHINGTON 25, D. C.

CSGAS-23

20 November 1947

SUBJECT: Release of Patent Application Serial No. 443,320

TO: Mr. William F. Friedman, CSGAS-14

1. Reference your letter dated 6 August 1947, subject as above.
2. No procedure has been established in this Agency whereby plain text which is cryptographed by means of the principles stated in the subject patent can be cryptanalyzed and read, assuming the device were to be used in a practical manner by adequately trained personnel and resulting in a normal military or commercial traffic expectancy.
3. In view of the above, it is necessary that, in accordance with the policy established by a memorandum for the Chief, Army Security Agency, from the War Department General Staff, Military Intelligence Division, G-2, dated 29 April 1946, subject: Release of Cryptographic Principles, as modified by an IRS from the Chief, Army Security Agency, dated 10 April 1947, subject: Procedure for Release of Information Concerning Secrecy Patents, the secrecy order now standing against the subject application for patent be maintained.

1 Incl  
ltr w/3 Incls

*Harold G. Hayes*  
 HAROLD G. HAYES  
 Colonel, Signal Corps  
 Chief, Army Security Agency

Declassified by NSA/CSS

Deputy Associate Director for Policy and Records

On 20130430 by TR/LT



HEADQUARTERS, ARMY SERVICE FORCES  
OFFICE OF THE CHIEF SIGNAL OFFICER  
WASHINGTON 25, D. C.

SLG-3

10 June 1946

Mr. William F. Friedman  
Army Security Agency  
Washington, D. C.

Dear Mr. Friedman:

In response to your oral request, there are transmitted herewith excerpts from the minutes of the Signal Corps Patent Board, Meeting No. 32, September 23, 1941, forming part of the record of your cryptographic invention, Serial Number 443,320, filed May 16, 1942, in the names of William F. Friedman and Frank B. Rowlett.

You have also asked for my opinion, as the patent attorney for the Signal Corps at the time this application was filed, as to the rights of the two joint inventors in this application.

AR 850-50, as it existed at the time the invention was made and also at the time the application for patent was filed, established three categories. The regulation provided that inventions made as a result of specific assignments to invent became the property of the Government. That this was not the case in regard to your invention is indicated in Paragraph 3 b of the Patent Board's action, which states that "there was no specific designation to invent the things described." Pursuant to this finding of the Patent Board, which was approved by the Acting Chief Signal Officer, you and Mr. Rowlett were not asked to assign the entire right to the invention, but were asked to give the so-called reversionary assignment. The latter provides that the application is the property of the Government for procedural purposes until a notice of allowance is issued by the Patent Office, at which time the entire right, title and interest reverts to the inventors subject to a non-exclusive license to the Government. This is believed to be in accordance not only with the Army Regulation AR 850-50, but also with the patent agreement which you signed in April 1936, which merely provided for reversionary assignments in cases where there was no specific assignment to invent the specific device in question and where the invention was to be kept secret.

Yours very truly,

*William D. Hall*  
WILLIAM D. HALL  
Patents & Inventions Counsel  
Legal Division

1 Incl  
Excerpts of Meeting No. 32

SIGNAL CORPS PATENT BOARD

"10  
(C-3)

MEETING NO. 32

1. The Board met at 10:00 A.M., September 23, 1941, in Room 3435, Munitions Building, with the following present:

- Lieutenant Colonel David E. Washburn, Signal Corps (R&D Division)
- Major Donald K. Lippincott, Signal Corps (R&D Division)
- Major F. E. Kidwell, Signal Corps (War Plans & Training Division)
- 1st Lieutenant A. P. Carter, Signal Corps (Plant & Traffic Division)

2. The purpose of the meeting was to consider the following inventions and to make recommendations for their disposition:

\* \* \* \* \*

d. Cryptograph, (~~Secret~~), by W. F. Friedman and Frank B. Rowlett, OCSigO.

\* \* \* \* \*

3. The Board finds:

a. That the inventions above in paragraphs 2 b,c,d,i,r,t and u have sufficient military value to warrant prosecution of patent applications by the War Department.

b. That the inventions arose in connection with and as a result of the official duties of the inventors, but that there was no specific designation to invent the things described.

c. That the inventors desire to obtain patents under the provisions of AR 850-50.

\* \* \* \* \*

/s/ DAVID E. WASHBURN  
David E. Washburn  
Lieutenant Colonel, Signal Corps  
Acting Chairman

/s/ F. E. KIDWELL  
F. E. Kidwell,  
Major, Signal Corps  
for  
William S. Rumbough,  
Lieutenant Colonel, Signal Corps  
Member

/s/ DONALD K. LIPPINCOTT  
Donald K. Lippincott,  
Major, Signal Corps  
Acting Recorder

/s/ A. P. CARTER  
A. P. Carter  
1st Lieutenant, Signal Corps  
for  
Paul C. Gripper,  
Lieutenant Colonel, Signal Corps  
Member

7-23-41



APPROVED September 30, 1941.

/s/ DAWSON OLMSTEAD  
DAWSON OLMSTEAD,  
Brigadier General, U. S. Army,  
Acting Chief Signal Officer