SECRET

REF ID:A273720

Nomenclature or designation (1)	Total quantity procured (2)	Unit cost (3)	Production agency or manufacturer	Technical literature (4)	Patents Status	Notes
Converter M-134-T-1	1	Unknown	Signal Corps Laboratories, Ft. Monmouth, N.J.	Exhibit —	U.S. Patent No. 2,028,772, issued 28 Jan 36	(5)
Converter M-134-T-2	2	Unknown	Signal Corps Labs.	None	See under item No. 3	(6)
Converter M-134 (SIGHIC)	12	$2,135.	Wallace & Tiernan Products, Inc., Belleville, N. J.	Exhibit	U.S. Patent Application No. 682,096; in secrecy status	(7)
Converter M-134-A (SIGMYC)	56	$2,400.	ditto	Exhibit	See under item No. 3	(8)
Keying Unit M-229 ~~(Sigcoo)~~	1	$2,955.	Signal Corps Labs.		None	(9)
Keying Unit M-229 (SIGCOO)	75	$500.	Wallace & Tiernan Products, Inc.	Exhibit	See under item No. 7	(10)
Converter M-134-C (SIGABA)	3,330	$1567.	Teletype Corp., Chicago, Ill.	Exhibit	Army: U.S. Pat. Application No. 70,412; in secrecy status Navy: (Some have been filed; details not known)	(11)
Converter M-161-C	2	~~$2,132.~~	ditto	Exhibit	~~See under~~ item 7	(12)
Converter MX-218/U (SIGTASE)	3	Unknown	Army Security Agency	None	Covered under item 7	(13)
Plugboard Rotor (SIGTHEK)	7,000	$26	L.C. Smith-Corona Typewriter Co., Syracuse, N.Y.	Exhibit	?	(14)

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11	Special cipher unit (SIGAMUG)	1,375		[illegible] Corp.	Exhibit	?	(15)
12	Converter M-228 ( )	2	$6,417.50	Signal Corps Labs	None	See under Item 13	(16)
13	Converter M-228 (SIGCUM)	3,220	$526.40	Teletype Corp.	Exhibit	U.S. Pat. Application No. 443,320, in secrecy status	(17)
15	Converter M-294 (SIGNIN)	500	$2300	ditto	Exhibit	Cryptographic features covered by application under Item No. 13	(19)
14	Converter M-294	1	$20,000	ditto	None	Cryptographic features covered by application under Item No. 13	(18)
16	Converter M-325	2	$3,500	L.C. Smith-Corona Typewriter Co.	None	U.S. Pat. Application No. 549,086, in secrecy status	(20)
17	Converter M-325 (SIGFOY)	12,000	$150.	ditto	Exhibit	See under Item No. 16	(21)
18	Converter M-409						
19	Rotors						

Notes

(1) Long title is given first, followed by short title (when one was assigned)

(2) The total quantity may have been procured under one or more contracts.

(3) Where two or more contracts were involved the unit cost is the average of unit costs of these separate contracts

(4) Only such technical literature as contain information describing the equipment is included.

(5) Item 1 was purely an experimental model and was never put into service, available in ASA museum

(6) The two machines constituting Item 2 were pilot models for Item 3, available in museum

(7) ~~These machines were procured under Contract No. W-1077-SC-249, 27 May 37;~~ delivered in August 1938 and were in service until superseded by Item 6; then destroyed except for one in museum.

(8) These machines incorporated some minor modifications in Item 3. Eight machines were purchased from the War Department by the State Department. ~~All~~ 56 machines ~~following contracts.~~ ~~W-1077-SC-349~~ were in service for several years.

(9) This served as pilot model for Item 6; ~~Keyed unit M-229~~ available in museum

(10) Keyed unit M-229 replaced the key-tape transmitter of Items 3 & 4 and served as controlling element for stepping the rotors.

(11) This machine was constituted the principal one used by Army and Navy for inter and inter-service high and medium-echelon classified communications. Preliminary models & pre-production models developed by Teletype Corp

(12) These were experimental models ~~constructed~~ in an attempt to produce a smaller and lighter version of Converter M-134-C, available in museum

(13) These were experimental models embodying modifications in Converter M-134-C so as to make the latter cryptographically equivalent to Item No. and Item No. ; available in museum

(14) This item was designed for emergency use with Item 7 in case of physical compromise of current rotors and key-lists, Converter M-134-C, until new rotors and key-lists could be issued. Although produced in quantity and issued it was never used since the emergency never occurred.

(15) This Special Cipher Unit made Converter M-134-C (Item No. 7) ~~to be used~~ utilizable for Combined Communications (with British only) as one version of a cryptographic machine designated as the CCM (Combined Cipher Machine).

(16) These were development models for Item No. 13

(17) These machines were employed for on-line and off-line teletype and radioteletype communications.

(18)

(19) These were delivered too late to be employed during actual hostilities, now in storage. A few were used in service tests.

(18) Hevelopment model, followed by ~~one additional~~ an additional development model before standardizing.

(20) Hevelopment model, followed by an additional development model before standardizing.

(21) The State Department purchased 1000 of these machines, put a number of them into service for a short period. The Army used them briefly in service tests but the machine was never used extensively because of poor performance.

Inventor	Date Filed	Appl. No.	Issued	Pat. No.	Principal Features
Hebern	31 Mar 21	457,419	30 Sept 24	1,510,441	Reciprocally wired rotor; Cascade
Koch	Ger 26 Sept 20		13 Feb 26	425,147	Basic on rotor
	Brit 10 Nov 19	27,778/19	10 May 20	163,357	" cascade
	U.S. 18 Sept 20	411,229	14 Apr 25	1,533,252	" reg & irreg motion
Beyer	U.S. 12 Aug 20	403,123	2 May 22	1,414,496	Equivalent of a rotor (But does not claim rotor – claims a slidable member
Wahnöe	Denmark 4 Mar 22		2 June 24	194,303	Concentric commutators in Cascade
	Br 1 Mar 23	6009/23			
	U.S. 28 Mar 23	628,237	30 Oct 23	1,472,775	
"SECURITAS"	Ger 23 Feb 18 !		8 July 25	416,219	(1) Rotor (2) Rotors in cascade (3) Enc-dec switch
BASIC – no U.S. or other foreign equivalents filed??					
Swedish Con. Date 10/10/19 Damm	Swed 10 Oct 1919	220089	26 Jul 22	52279	Equivalent of rotor but in 2-commutators
	Brit. 12 Mar 1920	7410/20	18 Aug 21	152,625	
	U.S. 2 Apr 1920	370,708	22 Jul 24	1,502,376	
Damm	Br. 28 Feb 22	5947/22	24 May 23	197,763	Auto. grouping of cipher text & auto spacing
	U.S. 1 Mar 1922	540,234	2 June 25	1,540,107	

General Notes on Data

(A) Long title is given first, followed by short title (when one is assigned).

(B) The total quantity may have been procured under one or more contracts.

(C) Where two or more contracts were involved, the unit cost is the average of the unit costs of the separate contracts.

(D) Following key numbers signify following producing or manufacturing agencies.

1. Signal Corps Laboratories, Fort Monmouth, N. J.
2. Wallace and Tiernan Products, Inc., Belleville, New Jersey.
3. Teletype Corporation, Chicago, Illinois.
4. L.C. Smith-Corona Typewriter Co., Syracuse, New York
5. Fournier Institute, Chicago, Illinois.

(E) Only such technical literature and/or manuals as contain information describing the equipment are included. Under the special notes below will be found data relative to any patents or patent applications filed by U.S. employees covering the specific item or applicable to specific features thereof.

Special notes on the items listed

(1) Item 1 was purely an experimental model and was never put into service; available in ASA museum. Cost of development unknown but might be obtained from old records of Signal Corps Laboratories. This development was covered by U.S. Patent No. 2,028,772, which was issued 28 Jan 1936.

(2) The two machines constituting Item 2 were pilot models for Item 3; available in ASA museum. Cost of development unknown but might be obtained from old records of Signal Corps Laboratories. This development was covered by U.S. Patent Application No. 682,096, which was filed 25 July 1933 and is still i n secrecy status.

(3) These machines were delivered in August 1938 and were in service for several years until superseded by Item 7; then destroyed except for one in ASA museum. Pat. application mentioned under item 2 covers these machines.

(4) These machines incorporated some minor modifications in Item 3. Eight machines were purchased from the War Department by the State Department. About a dozen were given to and used by the OSS after item 7 became available to Army. All machines were in service for several years. Pat. Appl. 682096 applies also to these machines.

(5) This served as pilot model for Item 6; available in ASA museum. Basic principles covered in U. S. Patent application mentioned under item 7 below. This unit replaced the key-tape transmitter of Items 3 and 4 and served as controlling element for stepping the rotors.

(6) These units were in use for at most 2 years, until Converter M-134-C replaced Converters M-134 and M-134 A.

(7) This machine constituted the principal one used by Army and Navy for intra and inter-service high and medium-echelon classified communications. Preliminary models and pre-production models developed by Teletype Corp; available in Navy museum. Basic cryptographic principles are covered by U.S. Patent Application No. 70, 412 which was filed 23 March 1936 and is still in secrecy status. It is believed that certain patent applications have been filed by U.S. Navy personnel and by the Teletype Corporation, Chicago, Ill., to cover certain special features of this equipment.

(8) These were experimental models constructed in an attempt to produce a smaller and lighter version of Converter M-134-C; available in ASA museum. Cryptographic principles the same as in item 7.

(9) These special cipher units were purchased from the Navy. They made Converter M-134-C (Item No. 7) utilizable for combined communications (with British only) as one version of a cryptographic machine designated as the CCM (Combined Cipher Machine).

(10) These were development models for Item No. 11. The cryptographic principles are covered in U. S. Patent Application No. 443,320, which was filed 16 May 1942 and is still in secrecy status.

(11) These machines were employed for on-line and off-line teletype and radioteletype communications; machines available in ASA museum. The Navy also used these machines. A few were issued to British for use only in combined communications.

(12) Development model, followed by an additional development model before standardizing; available in ASA museum. Cryptographic features similar to those of item 10.

(13) These were delivered too late to be employed during actual hostilities; now in storage. A few were used in service tests for a very short time. A few were used in Europe in 1946 by U.S. Constabulary Force for a short time.

(14) Development model, followed by an additional development model before standardizing; available in ASA museum. Certain features covered in U.S. Patent Application No. 549, 086, which was filed 11 August 1944 and is still in secrecy status.

(15) The State Department received 1000 of these machines, put a number of them into service for a short period and returned them. The army used them briefly in service tests. The machine was never used extensively because of poor performance.

(16) Developmental model; available in ASA museum.

(17) This item was the one forming the subject matter of Project C-52, Contract OEMsr-542, of Office of Scientific Research and Development, National Defense Research Council, Division 13,NDRC, Washington, 1946, pp 120--22. Developmental work done by Fournier Institute at no cost to the Government.

(18) Rotors of several types were made. The type used with items 2,3, and 4 were Enigma Style, not reversible or invertible; other rotors were all of Hebern invertible type.

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