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16 August 1948

SUBJECT: Development of Crypto-Equipments**TO: Chief, Army Field Forces
Fort Monroe, Virginia
ATTENTION: Chief, Development Section**

1. Reference is made to a letter with two indorsements from the Army Security Agency to Chief, Army Field Forces, 19 March 1948, subject "Joint Military Characteristics for Speech Privacy Equipment."
2. Reference is made to a letter with seven indorsements from the Army Security Agency to Commanding General, Army Ground Forces, 30 July 1947, subject "Requirements for Cryptographic Devices."
3. With reference to paragraph 1, this Agency is developing three ciphony equipments as indicated by ASAG 22, chart II. The low echelon equipment, ASAY 4, is intended for use within a division. The intermediate echelon equipment, ASAY 5, is intended for use between Army headquarters and Division headquarters. The high echelon equipment, ASAY 6 is intended for use between Department of the Army headquarters and Army headquarters. The ASAY 6 is a replacement for the AN/GSQ-2, 3. It is believed that the ASAY 6 will satisfy the Joint military characteristics for speech privacy equipment as revised by the Communications Equipment Committee on the Joint Committee Board and will also satisfy the Military characteristics for the AN/GSQ-2, 3 as submitted by the Signal Corps and concurred

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in by the Army Ground Forces on 23 November 1943. It is to be noted that the military characteristics for the AN/CSQ-2 required a security period of seventy-two hours while the Joint military characteristics imply grade II security (reference ASAG 22, Section II). It is believed that the development of these three ciphony devices will provide the Department of the Army with a suitable and required complement of speech security equipments. Attention is invited to the TSA-5, reference ASAG 22, chart II, the cryptocomponent of the AN/TC 25. These two equipments will provide for enciphered forty-eight channel voice transmission and are intended to be used between major force headquarters and Army headquarters. This type of encipherment will provide communication security for voice, teletype and facsimile transmissions in accord with the planning of the Signal Corps for an integrated communication system.

4. This Agency received from the Signal Corps on 30 July 1948, military characteristics for a ciphony equipment to be used between staff offices of a military organization over short haul, military fixed station and/or tactical wire facilities. It is reasonable to expect that this ciphony equipment may be used to provide communication security for voice transmission not only between staff offices of an organization but also for security of transmissions over subscribers circuits when the ASAY 6 and the AN/TC 25, (with TSA 5) are used as a central office facility.

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5. With reference to paragraph 2, this Agency is also developing three cipher machine equipments. The ASAM 7 is an electrical motor powered mechanism, will weigh about fifteen pounds exclusive of the power supply, is keyboard operated, provides tape copy with a twenty-six character output, and will operate off-line only. It is intended to be used in low echelons not having teletype facilities but able to provide a twenty-four volt power supply. The ASAM 8 is an electrical powered mechanism, will probably weigh about sixty-five pounds, exclusive of the power supply, is an integrated unit having a keyboard, printing unit and crypto-unit, will provide page copy and will operate either on-line or off-line. The ASAM 8 will work with the ASAM 7 and will then have a twenty-six character output. When working with an ASAM 8 the unit will have a thirty-two character output. The ASAM 8 is intended to be used in all echelons employing teletype up to and including Army headquarters. The ASAM 9 is an electric powered cipher mechanism, will weigh about forty-five pounds, is nonintegrated, and will operate, when provided with teletypewriter equipment, both off-line and on-line. This complement of equipments is not complete. No provision has been made for a low echelon, light weight, manually operated cipher device that may be used by organizations not having teletypewriter equipment and not capable of providing the power supply required for the ASAM 7. This Agency is presently investigating the various factors involved in the development of such a device intended as a replacement for the M-209. This initial research is expected to be completed by 1 March 1949 and it is recommended that preparation of military characteristics for this device be postponed.

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until this research has been completed.

6. Comments are requested concerning the adequacy of the planning for crypto-equipments as stated in the previous paragraphs.