

Department of the Army

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CSGAS 400.112

Standardization of Means of Interconnection of Component Parts of Communication and Cryptographic Equipments

Chief Signal Officer
Department of the Army

Director of Intelligence

24 October 1947
Major Whitehead/8129 Ext 216

1. Reference is made to letter from The Adjutant General, subject: "Air Transportability," file AGAG-8 452.1 (15 Sept 47) CGGD/D-M, dated 24 September 1947.
2. The Army Security Agency, commenting on this letter to the Director of Research and Development, GSUSA, prior to its publication, recommended that a paragraph be included to the effect that suitable means of interconnection of components of communication and cryptographic equipment be made mandatory in order to insure ease of installation and disconnection of these equipments capable of being transported by air.
3. The Director of Research and Development, GSUSA, suggested that the recommendation referred to in paragraph 2 be submitted to the Signal Corps and the Air Force for consideration of including such a requirement in Technical Committee consideration of electrical equipment.
4. The standardization of various items, such as cannon plugs, H. G. Jones plugs, or newly-developed means of connection that will permit ease of installation or disconnection of the component parts of a communication or cryptographic equipment installation, will prove of value in the adaptability of equipment for air transportability. The facility with which the installation may be dismantled, shipped, and reinstalled will depend upon the means employed in making the connections between the various components. The degree of this facility will determine to a large extent the suitability of the equipment for air transport.
5. It is recommended that means of interconnection of communication and cryptographic equipments that will provide for ease and rapidity of connection and disconnection be developed and standardized, and that the use of these means of interconnection be made mandatory, wherever possible, in the design of those equipments intended for air transport.
6. Your comment and/or concurrence in the above recommendation is requested.

FOR THE DIRECTOR OF INTELLIGENCE:

OCT 27 1947

SIGNED [Signature]

HAROLD G. RAYES
Colonel, Signal Corps
Chief, Army Security Agency

COPY FOR AS-80

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DRAFT

SUBJECT: Standardization of Means of Interconnection of Component Parts of Communication and Cryptographic Equipments

TO: Chief Signal Officer
The Pentagon
Washington 25, D. C.
ATTENTION: Chief, Engineering and Technical Division

1. This Agency suggested to the Research and Development Division, General Staff, United States Army, that suitable means of interconnection of components of communication and cryptographic equipments, in order to insure ease of installation and discontinuance of these equipments having the characteristics of Air Transportability, be made mandatory. This suggestion was intended for inclusion in the Adjutant General letter concerning air transportability. It was the belief of the Research and Development Division that the Adjutant General letter, later issued as letter, 24 September 1947, file AGAO-S 452.1 (15 Sep 47) CSGND/D-M, was not the appropriate instrument for this item and it was then recommended that this suggestion be submitted to the Signal Corps and the Air Force for their consideration.

2. It is believed that standardization of various items, such as cannon plugs, H. B. Jones plugs, or newly-developed means of connection that will permit ease of installation or discontinuance of the component parts of a communication or cryptographic equipment installation, will prove of value in the adaptability of equipment for air transportability. The facility with which the installation may be dismantled, shipped, and reinstalled will depend upon the means employed in making the connections

between the various components. The degree of this facility will determine to a large extent the suitability of the equipment for air transport. It is believed that the design of equipments in component parts of such size and weight as to permit air transportation is not a sufficient statement of characteristics to insure the most successful application of the equipments in their intended use.

3. It is therefore recommended that means of interconnection of communication and cryptographic equipments that will provide for ease and rapidity of connection and disconnection be developed and standardized, and that the use of these means of interconnection be made mandatory, wherever possible, in the design of those equipments intended for air transport.

4. Your comment and/or concurrence are requested.

MEMORANDUM TO MR. CLARK

26 September 1947

SIGCU' was developed at the time ASA was a part of the Signal Corps. The 131 subset was developed by the Bell Telephone Laboratories and was manufactured by Western Electric. This equipment primarily consisted of a mixer, which was used for the express purpose of mixing the clear text signal with generated key signals. The mixer and the SIGCU' comprised the cryptographic elements, however, as was reasonable the 131, had another function, that of transmitting and receiving the teletype signal. This was accomplished by means of a two-way repeater, so here in one unit was incorporated two separate functions; a cryptographic function and a communications function. All of our thinking from that day to this has been predicated upon the philosophy evidenced in the design of the 131 equipment.

Now that we are divorced from the Signal Corps it is time that we got out of the communications business. We are responsible for communications security, not communications. If we remain in the business of communications we are going to find some day that we are in serious trouble. While we may reasonably predict the course of communications in the future there is no certainty that the means presently in use for transmission of the electrical signals will not be superseded by one or several radical departures from currently standard practice.

If however, we devote our energies to the development of cryptographic devices and if proper coordination between this Agency and organizations responsible for the development of communications equipment we will be in

a position to more satisfactorily discharge our responsibilities.

This policy in regards to equipment performing only in one function, that is, the cryptographic function, is not new. In the case of radio transmission we do not transmit any electrical signals. We merely refer the signal to the radio transmitter and it is only in the case of wire transmission that we act as a communications agent.

This policy will be accepted very gladly by the Signal Corps. They are responsible for communications and they would like very much to discharge that responsibility without the assistance of this Agency. It is believed that the coordination required for development of communications equipment and cryptographic equipment will be possible without any difficulty. An evidence of this is indicated by the action taken by the Signal Corps at our request for modification of their facsimile equipment for the provision of proper connections for cryptographic devices.

The adoption of this policy should assist in a decrease in weight and size of our equipment. This is an extremely important factor today since great emphasis is placed on these two points by all using services.

WILLIAM BRAIN, Chief
TECHNICAL STAFF
SECURITY DIVISION

AS-80

3. AS-80 AS-24 4 Oct 47

Capt Guertin Ext 489

1. Attention is invited to the attached letter from The Adjutant General, subject as above, dated 24 September 1947, file AGAO-S-452.1 (15 Sept 47) CSGRD/D-M, forwarded for your information and guidance.
2. Reference is made to Comment No. 3, Carrier Sheet from AS-80, 25 July 47, subject as above, and to Comment No. 2, Carrier Sheet from AS-80, 16 July 1947.
3. It is desired that a proposed draft of a letter to the Signal Corps be

AS-80 AS-24 6 Oct 47

Air Transportability (continued)

submitted to AS-24 in accordance with suggestion of Research and Development Division, General Staff, USA contained in paragraph 2, attached Disposition Form.

4. Copy of subject AG Letter has been sent to AS-70 and AS-90.

2 Incls

- 1. D/F from R&D Div.
- 2. Ltr from AGD subj.
Air Transportability

/s/ CHH

CHARLES H. HISER
 Lt. Colonel, Signal Corps
 Acting Deputy Chief
 Army Security Agency
 Ext 462

22-88/274

AS-24 AS-80 17 Oct 47

It is suggested that the inclosed draft of a letter be forwarded to the Chief Signal Officer.

3 Incls

- 1. D/F from R&D Div.
- 2. Ltr from AGD subj.
Air Transportability
- 3. Proposed draft of
ltr to SigO

A. JINCOV
 Chief, Security Division
 Attention 241

AS
 22-88/274
 17 Oct 47
 22-88/274