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USIB-D-39.5/9
9 August 1961

UNITED STATES INTELLIGENCE BOARD

MEMORANDUM FOR THE UNITED STATES INTELLIGENCE BOARD

SUBJECT: Machine-Language Producing Typewriter for Overseas Installations

1. On 25 July the United States Intelligence Board considered the CODIB memorandum and proposals regarding a machine-language producing typewriter suitable for overseas installations (USIB-D-39.5/8, 7 July) and took the following action:

> "Following discussion with Mr. Borel and [redacted] the Board noted the CODIB memorandum on problems relevant to the development of a machine-language producing typewriter suitable for use in overseas installations (attachment to USIB-D-39.5/8) and approved the CODIB-developed statement of 'USIB Equipment Requirements for Remote Systems Input Device' (attachment 1 to above CODIB memorandum). It was agreed also that these requirements should be forwarded to the Department of Defense for appropriate further action, including on research and development and security aspects of the problem." (USIB-M-165, item 11)

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2. Pursuant to this Board action the attached letter subsequently was forwarded to the Secretary of Defense, together with the statement of USIB equipment requirements and general security specifications for developing such equipment. In this connection, we might note that the example of keyboard layout referred to in paragraph 3.b. of the statement of equipment requirements was previously circulated as an attachment to USIB-D-39.5/8.

[redacted]

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Executive Secretary

Attachment

Regular D office
50 copies to Mr Borel

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CENTRAL INTELLIGENCE AGENCY
Washington 25, D. C.

OFFICE OF THE DIRECTOR

The Honorable Robert S. McNamara
The Secretary of Defense
Washington 25, D. C.

Dear Bob:

The United States Intelligence Board has for some time been concerned about the security problems attending the use of flexowriter-type equipment for intelligence purposes. We have on several occasions re-emphasized the need for resolving this problem to the Communications Security Board.

As you know, this type equipment produces message tapes as part of the typing process. These tapes can in turn be fed into communications equipment and also serve as machine language input into intelligence data processing systems.

Provided the security problem can be overcome, flexowriter-type machines will be used increasingly at medium-sized and small foreign posts, by the State and Defense Departments as well as CIA. We should therefore seek to avoid multiple maintenance problems at these posts, to simplify physical security arrangements and inspections, and to facilitate mutual use of equipment in case of breakdowns.

To that end the Intelligence Board has formulated and approved the attached statement of USIB Equipment Requirements for Remote Systems Input Device.

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A close relationship exists between the research and development required to obtain the needed equipment and the solution of the communications security problem in its use.

Since the Department of Defense is executive agent for communications security matters, the Intelligence Board concluded that our requirements should be sent to you. It is the Board's hope that you can promote the development of this device so that the Intelligence Community can at the earliest possible date standardize on a piece of equipment which is not only more versatile than presently available commercial models but also free of unacceptable security hazards. Moreover, I understand that there are many applications for this equipment outside the intelligence area.

General Erskine and Mr. Dailey of your office are well aware of the Board objectives and the problems involved. My own staff is of course available to work with your representatives should additional information be required.

Sincerely,

S/ Allen W. Dulles
Director

29 July 1961

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USIB Equipment Requirements for Remote Systems Input Device

1. This is a statement of USIB requirements for an input device to be used in typing classified information at diplomatic establishments and other jointly used installations abroad. The statement has been formulated by the USIB/CODIB Working Group on Remote Systems Input. The requirements listed include those common to all participating agencies, as well as those of major significance to one or more agencies. They will be the basis for developing agreed engineering specifications for a common use machine which will be operable by 1965.

2. Objectives:

a. To produce reports in a machine processable language and medium as a byproduct of the original typing by the reporting activity.

b. To transmit this information to the processing centers concerned for further dissemination, the mode of communication depending on the urgency of the information contained in the report.

c. To put the reports into EDP systems with a minimum of human intervention.

d. To use the same equipment to prepare information for transmission to the reporting activities.

3. Requirements for Input/Output Typewriter:

a. The typewriter should be able to produce a machine processable language on a medium such as paper or magnetic tape as a byproduct of typing, and should be able to automatically type when reading this byproduct at a speed of 120 words per minute or faster.

b. Standard four-bank keyboard with upper and lower case letters, digits, and those typing and programing functions, and special characters, which are determined during the preparation of engineering specifications to be needed by each agency. See example of keyboard layout attached.

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c. Provision for programing; that is, the capability for automatically controlling the functioning of the typewriter, including the automatic typing of repetitive and control data, to insure formating of records to be processed into an EDP system. The typewriter should be designed to require the minimum exercise of operator judgment.

d. Equipment easy for average typist to use, including provision for a simple and easy method for correcting the machine language byproduct of typing.

e. Safeguards against interception of information.

f. Safeguards against accidental or deliberate erasure of reports in transit, if magnetic storage is involved.

4. Coding Requirements:

A coding structure is required which can carry the full range of information typed through both the telecommunications and the data processing systems while retaining the capability for reconstituting the original language, including the distinction between upper and lower case, at the output terminal. This must be accomplished without exceeding the internal limitation of 64 code combinations imposed by the computer systems now planned by member agencies. This includes provision for the direct acceptance of the machine byproduct into then-standard communications equipment. For planning purposes it is assumed that both 8- and 5- channel communications equipment will be in use at diplomatic and other jointly used installations abroad in 1965. Coding requirements for communications which must pass through 5- channel equipment include:

a. A 5- channel code which does not lengthen teletype message significantly.

b. A 5- channel code which is sufficiently compatible with the Baudot code to make possible the monitoring of messages during handling by communications personnel.

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5. Other Considerations:

Features which should be weighed in evaluating the merits of competing devices include:

a. Office Use - equipment should be quiet, compact and durable.

b. Maintenance - telecommunications wire technicians, or their equivalent in technical skill, should be able to maintain the equipment with a few weeks' special training.

Appendix 1: General Security Specifications for Equipment Development
Appendix 2: Illustrative Keyboard Layout - 4 Bank, 44 Keys

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