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29 March 1945

MEMORANDUM to Chief, Control Office

Subject: The Finding of Duplicate-text Messages by B-2 and B-4

## 1. General:

Both B-2 and B-4, as a primary step in the processing of traffic, search the incoming traffic for duplicate-text messages. B-2 works with the first copy of traffic, B-4 with the third. The question arises as to the possibility of combining the B-2 and B-4 procedures into a single operation. The present procedures are outlined in the following paragraphs together with a discussion of the major factors involved.

## 2. B-2 Procedure:

The first copy of all teletype traffic, after being DD edited by B-4 and de-discriminated by B-2, passes to a B-2 logging unit. This unit consists of approximately 30 people.

The traffic is logged into a set of ten books which have been prepared by IBM with all possible four-digit groups listed in order. These groups are used as the first random gate of the message, and next to the appropriate group are written the discriminant control gate (usually eight digits) and a quality indicator (1, 2, or 3) representing the quality of the text. When a duplicate is found in the processing, its quality is checked against the one in the book, and, if the same or lower, the message is marked "Dupe" and is not punched by IBM. If of a higher quality, it is passed through for punching, and the higher quality indicator recorded. A small amount of mail traffic with special characteristics is also processed in this manner.

## 3. B-4 Procedure:

The third copy of only current teletype traffic (traffic received in B Building within 30 hours of the close of the intercept day) is forwarded to the Traffic Analysis section (B-4-C). Here it is processed first by the Traffic Priorities Unit and then passed to the Area Specialist Sub-section where it is sorted and distributed to the proper areas. The areas wait until all the traffic is in for the intercept day and then proceed to processing. All traffic is

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sorted by Hatsu and Tena series and duplicate texts are brought together. To catch the duplicates between different intercept dates (due to relaying) a list of characteristic gaps is maintained. Several areas maintain complete logs for this purpose; others do not find too thorough a procedure necessary. It is difficult to estimate the amount of time spent in the Area units to find duplicate texts since this task is mixed in with the complete processing procedure. However, if the traffic did arrive in the areas with the duplicates together, it probably would not save more than a few hours work in each of the four areas.

#### 4. Basic Factors:

There are several basic factors which must be borne in mind in the consideration of combining the B-2 and B-4 procedures:

- a. The objectives of the two procedures are different. B-2 is interested in text, B-4 in preamble. It is sufficient for B-2's work to designate a message as a duplicate without identifying it and comparing it physically with the other copies. Its object is to cut down the IBM work so that the same text does not have to be machine-punched, decoded, and translated several different times, B-4, however, requires the various copies brought together physically since, even though the texts are the same, the preambles may vary, and this makes possible the uncovering of relay messages, latent Hona's, etc.
- b. It is necessary that the first copy be kept in teletype roll order and not cut up. IBM punches its cards of the message-text direct from the perforated tape off the teletype, and the IBM operator must follow this tape, as it prepares the cards, with a copy of traffic so as to catch errors and make the required adjustments. On the other hand, it is just as necessary for the third copy to be cut up into messages for proper area processing as described above.
- c. The largest percentage of duplicate texts will appear in the late teletype traffic; i.e. between the current and late teletype. A large portion of this late traffic is from Australian intercept which, to some extent, duplicates West Coast coverage. Current teletype accounts for approximately 40% of the total teletype, and, since late teletype is not handled by the Area Specialists, 60% of the material, with which B-2 is concerned, is of little interest to the Areas.
- d. Because of the use made of teletype traffic by the Traffic Priorities Unit of B-4, it is of considerable importance that nothing be placed in the way of its reception of the third copy of traffic. This unit pulls all currently readable traffic, which, from externals,

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appears to be of high intelligence or cryptanalytic value. Its prompt processing of traffic has resulted in the uncovering of a large number of messages of immediate operational value. This unit is the only source of such material which otherwise might wait several days to several weeks for decoding and translation.

#### 5. Conclusions:

Several plans might be worked out for a combination of the two procedures, but all are complex and would probably involve more personnel than are presently used in the independent operations. For example, the first and third copy might be processed by B-2, the first copy being prepared as usual and the third copy being cut up and filed by the dupe-control gate. When a duplicate-text appears through the log books, the third copy would be stapled to the copy already in the file. However, this would involve a piece-meal cutting operation on the third copy and a filing operation as well. The delay would necessitate moving the traffic priorities unit to the other building. It is also to be noted that the finding of duplicates in the third copy, as presently conducted, does not constitute a problem of major importance since it fits into the regular processing and requires little additional effort. It is, therefore, suggested that the procedures now in use, be continued.

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