

15 April 1945

## EQUIPMENT BRANCH

## MAINTENANCE SECTION

VE-DAY EQUIPMENT ASSUMPTIONS

1. Based upon informal discussions with Major Sampson, the following general assumptions are made:

a. Contrary to certain previous assumptions, it is believed that VE-Day will not present any serious problems on the handling and reconditioning of those cryptographic equipments for which the Signal Security Agency is responsible.

b. Reconditioning and storage of SIGABA, SIGCUM, and possibly the ISI equipment, would appear to be the principal items for consideration on VE-Day and Period 1.

c. It is anticipated that eventual Pacific requirements for cryptographic equipments will be equal to and/or probably greater than the current HTO requirement, with considerable emphasis on radio communication.

d. It is assumed that NO LARGE SCALE REQUIREMENT FOR RECONDITIONED CRYPTOGRAPHIC EQUIPMENTS WILL BE EVIDENCED FOR THE FIRST SIX (6) MONTHS OF PERIOD 1. However, in the event of a surge of Pacific requisitions for this period, it is anticipated that the following reserves will "hold the line" until such time as reconditioned machines become available.

	<u>SIGABA</u>	<u>SIGCUM</u>
VAULT	228	180 (71 of this number must be converted from synchronous to universal operation.)
SWPA	24	251
FOA	✓ - Quantities forthcoming	x
TTY CORP.	500 (Increments of 50 per month. Total delivery to be completed Oct 45)	None
TTY CORP.	(700) (Future contract pending.)	None

Teletype Corporation may be considered as a second source for reconditioning SIGABA and SIGCUM equipment only when they complete their current contract for SIGABA's (October 1945), and if they have no further contracts for producing the equipment at that time.

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2. SIGJIP does not constitute a major problem at this time because of the limited number of sets in the WFO. In addition, that theater has been requested to return their 68 sets to the SSA. At the present time there are 61 SIGJIP's in the SSA vault, and 500 on order. Potential SIGJIP problems are contingent upon determination of the pending AOF requirements. It is to be noted that if the classification of the subject device is reduced to RESTRICTED the SSA will have minimum responsibility for the device insofar as equipment maintenance is concerned.

3. It is contemplated that SIGSALY activities will remain substantially unchanged in Period 1 (Capt. Baswick). Period 3 and/or Period 4 storage of the equipment at SSA is not considered feasible when the 80 tons per terminal weight is considered. New Cumberland might be considered as the location for final storage.

4. Until such time as the SSA should receive a directive indicating responsibility for the reconditioning of the Converter M-209, it is considered inadvisable to go into the matter, or to formulate Period 1 plans. At the present time Storage & Issue Agency is responsible for procurement, storage, and issue of the subject device, and the several Signal Depots are responsible for its maintenance.

5. Providing the AM/GSQ-2 is not procured in greater quantities than the contemplated six (6) terminals, final storage could be effected at the SSA warehouse.

6. It is estimated that those SIGABA's and SIGCUM's to be returned here for reconditioning and transshipment to the Pacific can be adequately handled insofar as physical facilities are concerned. It is assumed that much of the storage required will be of a transient type, i. e., equipment will be received, reconditioned, reshipped immediately, or reshipped after a short storage period. In the event that SSA vault space is not available for the transient storage of these devices, it is recommended that the equipments be stored at convenient locations within Operations A building, utilizing a procedure similar to that now being followed by Distribution Section for overnight storage.

7. Section F-3, Maintenance Unit, has a personnel strength of 53, of which approximately 10 are qualified for SIGABA maintenance, 10 qualified for SIGCUM maintenance, and the remaining 13 being engaged in administration, supervision, and miscellaneous maintenance such as SMOOSE, SIGHIN, SIGJODO, SIGTOT tape production maintenance, and Security Division Teletalk maintenance, etc. Assuming that 2/3 of the 749 SIGABA's now in WFO are to be returned to the SSA for reconditioning, it is anticipated that the 10 SIGABA maintenance men spending an average of four (4) days on each machine could complete a reasonable reconditioning job on the 500 SIGABA's in approximately six (6) months. It is believed that the SIGCUM maintenance force could accomplish reconditioning of 2/3 of the 515 SIGCUM's now in WFO in about 1/2 the time required for SIGABA reconditioning. The 200 SIGABA's and 141 SIGCUM's in WFO have not been taken into consideration in the above calculations; their inclusion would add approximately one (1) month to the reconditioning time. Although replacement part stock reserves for the above equipments have been gradually increased over the past two years, shortages of certain items might cause delays in the reconditioning process at the outset; however, it is believed that Teletype Corporation can be geared to

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greater spare parts production when required. Such a requirement will probably coincide with a reduction in production of complete equipments.

8. As for periods 2-3-4 it may be envisioned that that portion of the SSA warehouse now utilized by "C" Branch will be available for equipment storage. Thus SIGABA, SIGCUM, SIGLHA, and similar, or smaller equipments may be stored at the SSA without extensive preparation therefor.

9. As indicated in paragraph 1c above it is assumed that the Pacific requirement for radio communication will be considerably increased. It is believed that SIOTOT, which is rather inflexible, and SIGCUM which can be used for highly classified traffic, only upon specific authorization, are not the answer to the problem. Although the 70 SIGJODO's authorized by General Stoner would help considerably in the handling of the increased volume of secret radio traffic, thought should be given towards requesting General Stoner to reconsider the limited quantity of the SIGJODO's now authorized. It would appear that the device is one answer to the fairly immediate problem of increasing radio traffic, and that no other available device even approaches satisfying the potential requirement.

10. A potential VE-Day problem arises in connection with 131 equipment. General Stoner's memo of 27 November 1945 gives no clear cut indication of the responsibility for VE-Day and Period 1 reconditioning of the subject equipment, viz "---Plant Engineering Agency will be responsible for procurement and initial storage and the issue of such equipment to Signal Security Agency for final preparation and issue. ---" It is to be noted that upon receipt of the subject equipment by the SSA it automatically becomes an item of cryptographic issue insofar as distribution is concerned, and as such, under existing practices, is returned to the SSA by cryptographic holders for necessary reconditioning etc. Should this practice be continued on VE-Day the volume of work would necessitate an increase of the Maintenance Section personnel and space, obviating an adjustment of the assumptions made in paragraph 1c above. Major Sampson is taking steps to clarify this potential question of division of responsibility in order that plans may be made to cope with the additional work load should the SSA be charged with the 131 equipment reconditioning responsibility.

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EQUIPMENT BRANCH

PROCUREMENT SECTION

CRYPTOGRAPHIC EQUIPMENT RESERVES:

	<u>MTQ</u>	<u>SSA</u> <u>VAULT</u>	<u>SWPA</u>	<u>ETO</u>	<u>FOA</u>
SIGABA	200	222	86	749	5
SIGCUM	141	120 (49 U <sub>3</sub> 71 Syn)	251	313	80
SIGJIP		61		132	

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