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I. COVERT ENGINEERING DIVISION

1 January - 31 March 1974

A. Covert Communications Facility (CCF)

1. General

a. The original Allocation 26 account has been <sup>25X1A2d1</sup> divided into two segments. A Type II [redacted] stock reserve has been established in [redacted] building 2 to satisfy <sup>25X1A6a</sup> clandestine requirements; and the remainder was transferred to Account 903, [redacted] and retains its original identity as Type I Allocation 26. A three-man team from OC-E/ESD/MSB directed the project. <sup>25X1A6a</sup>

b. Covert Communications Symposium No. 6 was held in the CED/CCF conference room on 26 March 1974. Symposium No. 7 is scheduled for 30 April 1974 in the Headquarters building.

c. The annual audit report on Accounts 907 and 909 was received during the reporting period. A few minor discrepancies were noted; and most have been rectified via the efforts of the Chief, OC-E/ESD/MSB, and OC-E/CED/CCF personnel.

d. OC-E metric-conversion meetings Nos. 2 and 3 were held during the quarter. Meeting No. 4 will be held early in April. We anticipate that dollar costs for conversion will be identified prior to 1 July 1974.

e. The MBO video tape program was held at CCF on 7 and 8 February 1974.

f. Tours and briefings:

23 January - DD/M&S Trends & Highlights  
8 February - DDO Clandestine Familiarization Course  
12 February - Overseas Assignee Briefing <sup>25X1A9a</sup>  
14 February - [redacted] OC-O/COD, and DDO, were given a half-day tour of the CCF <sup>25X1A9a</sup>  
7 March - [redacted] <sup>25X1A9a</sup> from the Director, Collection and Processing Assessment Group, Intelligence Community Staff

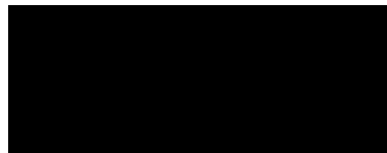
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TEC-701 Systems Operations  
for Technicians  
High Risk of Capture  
OPS-106 Covert Communications  
Systems



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2. Quick Reaction Section (QRS)

a. All operationally requested SV/A-4 secure voice systems were deployed by the end of this reporting period. Seven of the thirteen contingency SV/A-4's requested by area headquarters are ready to ship. The remaining six are being processed through QAB.

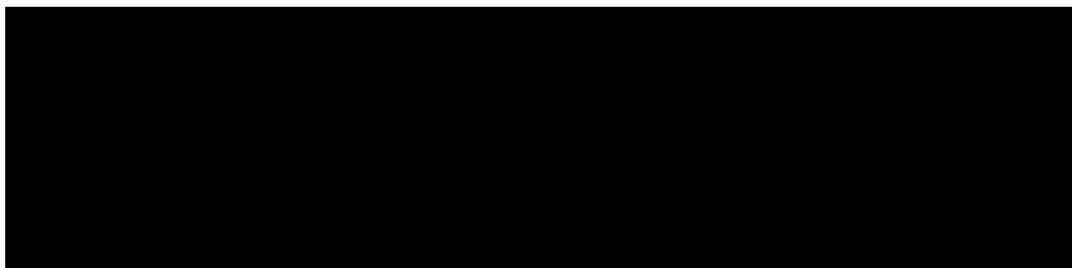
b. An immediate requirement to provide a records communications link between [redacted] resulted in the SD-7. The system is comprised of a BCS-7, DT-2, and SV/A-4 at each end of the link. It was delivered directly to the warehouse on 27 March. 25X1A6a

c. With the SV/A-4's arriving in the field, the thrust now appears to be voice privacy systems. Requirements for the last six weeks now total 66 RS/( )-523's with cable traffic indicating additional requirements. As of 26 March there were 5 RS-523's, 107 RS/A-523's, and 24 RS/B-523's in stock.

d. The SD-6 records link was completed and thoroughly tested. However, just prior to shipment, it was placed in a hold status until a determination could be made as to whether the requirement still exists.

e. Projects:

(1) SV-8 Secure Voice System - The first service test model was completed and tested against the prototype system. Fabrication of an additional four STM's is to be initiated circa 4 April. Results of road and bench testing of the first STM to date indicate that it performs as desired. The voice quality is excellent, better than the "green phone."



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(3) RS-710 Signaling System - All necessary system components were received this quarter. Two Porta-Mobils were tested in QAB and forwarded to the field to conduct on-site surveys, including use of the existing [REDACTED] repeater.

(4) CU-802 Control Units - Replacement of the CU-802 switches was completed on those units on hand. As other units become available, they will also be modified. Units in the field will be returned to Headquarters for modification on a replace and return basis.

(5) Secure Facsimile - The Graphic Sciences units were received and comparatively evaluated against the Xerox facsimile units. The Graphic units were superior to the Xerox units when hard-wired through the SV/A-4 secure voice system. The entire system--SV/A-4's, Graphic units, and shielded boxes-- was turned over to COMSEC for TEMPEST testing. Results to date have not been particularly good. A new "box" approach may be required. Late in this quarter facsimile units from 3M were made available. Comparative testing is also being done on these units.

(6) RU-523 Repeater - One of two prototype repeaters for use with the RS/( )-523 voice privacy equipment was bench checked and road tested to meet a crash requirement [REDACTED]. The voice privacy units (17) have been recrystallized and were ready for road testing on 01 April.

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(7) RR/A-, B-, C-803 Receivers - Forty Bell & Howell R-500 receiver modules were received and passed T&I. These modules will serve as the heart of the RR-803 receiver. The prototype RR-803 has passed its technical evaluation and is in process of being operationally evaluated. Upon conclusion of testing, fabrication of the 40 units will be initiated.

(8) MPG-65 Handcrank Generator - All internal work on the MPG-65 handcrank generator has been completed and the information required for the contractual package was submitted to CEB.

(9) Novatronics Clock Modification - The clock and battery-charging modification on the Novatronics printer has passed all technical tests. In addition, the printer was integrated as part of an SR-4 signaling base and tested operationally with good results.

Upon receipt of the necessary documentation, the modified unit will be forwarded to the field for further testing before mod kits are made up for all Novatronics printers.

25X1A5a1 (10) The Government-owned NOVA computer was repaired at [redacted] during the first week of January. The computer had suffered a power supply failure which led to damage in other sections of the system. Since no service contract was available with [redacted] to perform repairs, the system was repaired [redacted] personnel. 25X1A5a1

25X1A (11) A requirement was established for operational [redacted] use in a CK/A-33 and compatibility with the CY-2 electronic key generator. Close COMSEC, COD, and [redacted] support has been obtained in meeting this requirement. QRS is currently working with [redacted] to generate the necessary paper tape for delivery to NSA for [redacted]. 25X1A5a1 25X1C1a2

25X1A5a1 (12) Two MU-531A memory units were delivered by [redacted]. These 32,000-bit memories are to be evaluated as replacements for the existing core memories. The [redacted] memories have a small mercury battery to maintain data in the C-MOS memory when the power is off. 25X1A5a1

(13) Two CU-531 control units and two MU-531 memory units were delivered by [redacted] this quarter. These are STM units to be evaluated for production at a later date. The CU-531 and MU-531 are two of the major units in the SU-531 ELD base unit. 25X1A5a1

(14) A contract was awarded to [redacted] for fabrication of the I/O chip for use in the CY-2 electronic key generator. This effort is to verify the new artwork for this chip. 25X1A5a1

25X1A (15) Two data clocks were delivered by [redacted]. These data clocks were developed under a development contract with [redacted]. The data clocks are to be used in the field set for the SU-531 [redacted] base station. The clocks are being evaluated prior to production later this year. 25X1A5a1

(16) A meeting was held with NSA on 21 February to determine the status of NSA involvement in the CY-2 program. It was determined that the [redacted] at NSA would take over program responsibility at NSA. 25X1A

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(17) The first CK-42 prototype was delivered 27 March 1974. It will be evaluated prior to starting phase two of the contract.

f. Documents:

Published

- (1) Operational documents - 14
- (2) Technical manuals - 5
- (3) QAB reports - 8
- (4) OCHB's - 1

In Preparation

- (1) Operational documents - 15
- (2) Technical manuals - 12
- (3) OCHB's - 1

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A total of 91 [REDACTED] and Headquarters photo and printing services requisitions were processed during this quarter.

A total of 8 Antenna Manuals were sent out this quarter.

g. Antennas:

(1) The final report of the antenna anechoic chamber evaluation by NBS was received on 20 March 1974. The report shows that the chamber does not meet all aspects of the specifications. The problem areas are excessive reflectivity levels in the quiet zone, large signal variation through the quiet zone, and an antenna azimuthal positioner shortcoming. A copy of the report has been forwarded to the contractor through the contracting officer. After his review, a meeting will be proposed to discuss it and try to resolve the problems.

(2) Seven disguised TV-type antennas f/u/w SV-4's were completed.

(3) Procurement of five 15-watt, 145 - 500 MHz, 75/300-ohm balun transformers has been initiated.

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██████████, of Denver is making these on a special order. They are to be evaluated with the intent of using them in TV-type antenna applications over a very broad frequency range.

(4) The Velcro board signaling units now will have three antenna options: A 32-inch telescoping whip, ██████████ and any 50-ohm external antenna by use of an adaptor cable.

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(5) An evaluation of the Ringo AR-2 antenna shows that its gain is approximately equivalent to that of a resonant half-wave dipole. The published 3.75 dB gain is misleading because it is referenced to a poorly designed whip.

(6) Eighteen additional AN-100 antennas are being fabricated for stock.

(7) Some 16 quick-reaction-type projects for verification of antenna performance were completed.

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(9) A compendium of field-expedient antennas is being prepared. This manual covers all types of antennas developed by QRS/ANTS for field operational use.

(10) One TV-type antenna was modified for ██████████ application with the RT-532.

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h. Micromin:

(1) Receive-Only Memory : The receive-only memory is a miniature, versatile, low-power memory. When finished, the building block units will provide parallel/serial data flow in/out with capacity appropriate to the need (4 to 32 kilobits). The first portion of the circuit has been laid out using multi-layer (conductor) ceramic substrates. The overall dimensions of the memory matrix unit (4096 bits) package are 0.950" x 0.975" x 0.100".

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(2) CY-3 - The first MOS chip contract with [REDACTED] is considered complete, with the following quantities delivered: 100 clock chips and 232 timing chips from 24 families. The production contract has the following quantities delivered: 122 clock chips and 157 timing chips from 30 families.

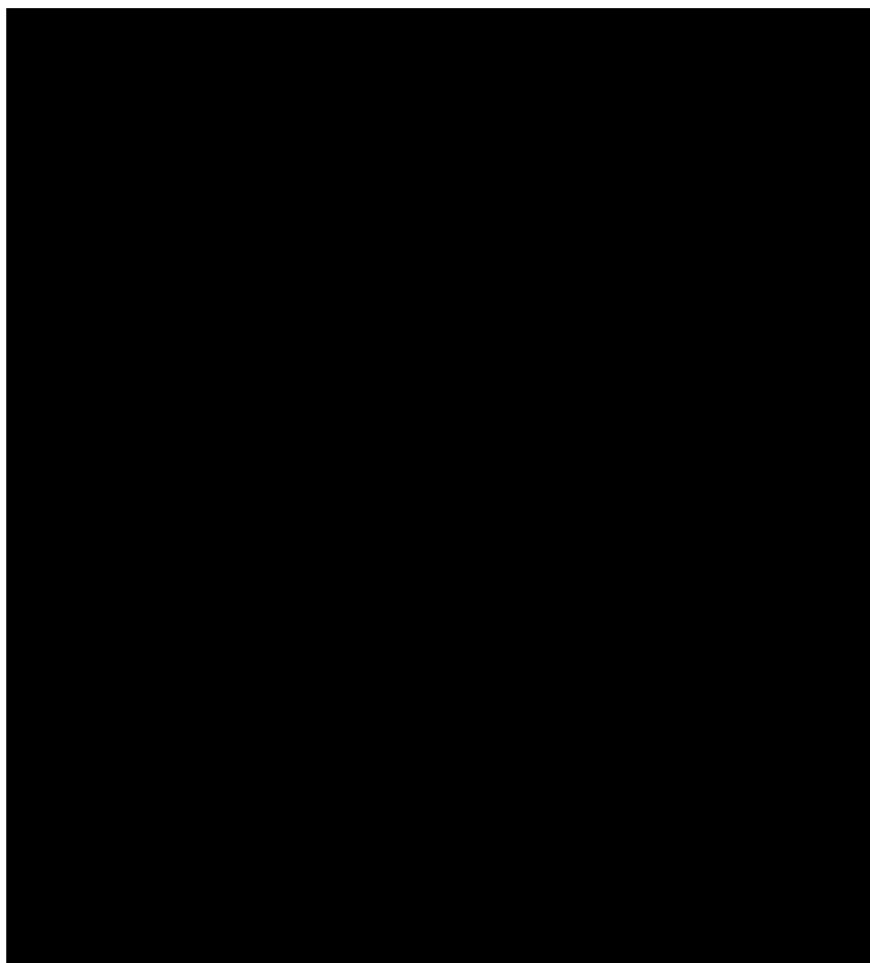
(3) TL-4 - Two TL-4 systems have been deployed. Four more systems are being built in-house, and production contracts are being given to outside vendors.

(4) Miscellaneous - One hundred twenty hybrids have been delivered on various projects, including RS-519, TL-4, CY-3, and LIRA and LORA programs.

g. Equipment deployed:

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During this reporting period a total of [REDACTED] communication terminals were deployed to the field. An additional 40 ancillary/support items were requested and provided by the SOR route.



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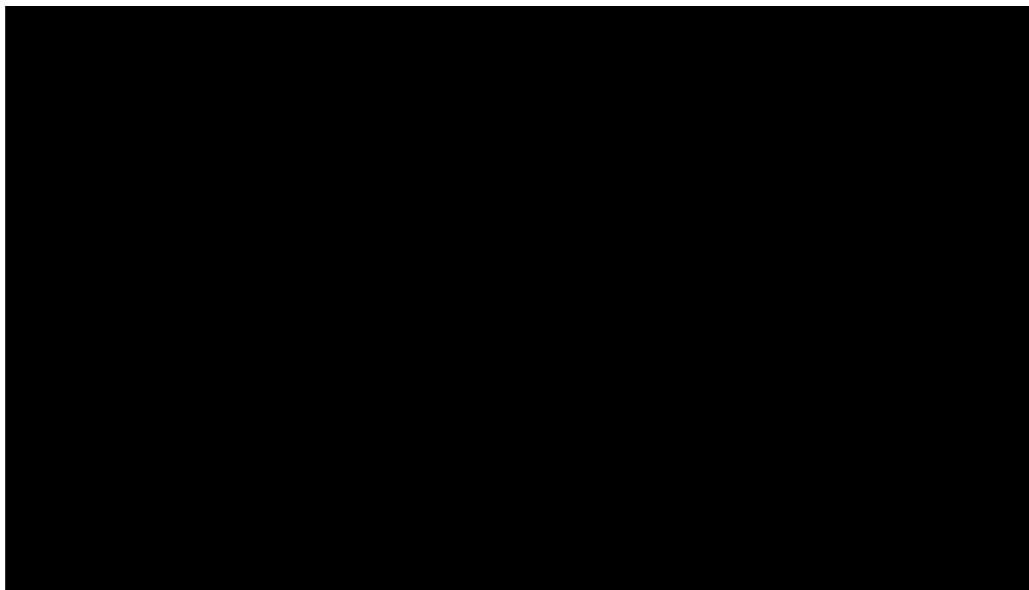
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3. Limited Range Agent Communications Section (LIRA)

a. The additional items needed to complete the proposed field test equipment package were received during February. This equipment arrived at a very opportune time. The project engineer was already in the process of preparing for TDY to provide technical assistance and guidance on certain secure voice and signaling installations. As a result, we were able to send the package on ahead of the engineer and field evaluation of the package was initiated in March. Once the equipment is returned, it will undergo a full QAB evaluation.

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b. We received another model of the miniature VHF receiver (for use with the RS-708) manufactured by [redacted] for evaluation. This model is supposed to be easier to recrystallize than the model previously evaluated. However, we are still awaiting delivery of band-edge crystals to determine exactly how easy it is to change crystals and realign the receiver and to verify that the receiver meets the vendor's specifications at the upper and lower limits of the frequency range covered.

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c. Since the last report we have conducted additional in-house tests of the SX-6 spread-spectrum transceiver. After completion of these tests, the equipment was returned to the vendor for additional rework and testing. The results of the testing accomplished at the factory again differed from those obtained in the [redacted] area. Therefore, an additional test and evaluation session is to be

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held at the vendor's location in April. The decision as to whether to go into production with the SX-6 this fiscal year will depend largely on the results of this next test.

d. We are still awaiting delivery of the SV/( )-4 clock boards in order to test the SV-4-series equipment with the RU-523. In the meantime, we have submitted a request for a price quotation on the production model of the RU-523 (with RS/( )-523 clock boards).

e. We received two MS-10 frequency survey units on 11 March and are starting the evaluation.

f. TEMPEST testing of a remote alarm (AL-15) for use with the SV/( )-4-series equipment was completed in late March. Since we must now finalize the required MWO's, assemble the modification kits, and produce a quantity of AL-15's, we estimate it will be a minimum of six months before this feature will be available for field use.

g. As a result of testing the SV-4 and SV/A-4 with various records communications systems for [redacted] use, along with input from the field and other sources, it was determined that a number of modifications were required to improve the signal quality and reliability of the SV/( )-4. Therefore, MWO 169-3 [redacted] was developed and shipped to the field on a priority basis. This program included the training of two technicians in the details of the MWO and sending them on TDY to the four communications areas having the majority of the SV/( )-4 installations and requirements. This program was initiated in early January, and the two technicians completed their CCF training and were on the road by 4 March. By the end of March, they had visited several stations and assisted area technicians in completing the modification of several sets. They are scheduled to return to [redacted] during the latter part of April, since both are scheduled to receive additional training in conjunction with their respective upcoming PCS assignments. Completion of any outstanding modifications after that period will be the responsibility of the respective areas.

g. The status of various limited-range R&D projects levied on ODE is as follows:

(1) The request for proposal (RFP) to develop an improved signaling system to supplement the RS-708 has been finalized and sent out. ODE expects to receive replies during April.

(2) The RFP on UHF data transmitters and receivers to be used in a UHF version of the SV-8 has been sent out, and proposals have been received. These proposals are currently being evaluated.

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(3) ODE has given [REDACTED] a contract to build five dc-to-dc converters for use with the RS-531 [REDACTED] system. The estimated delivery date on these five units is late June 1974.

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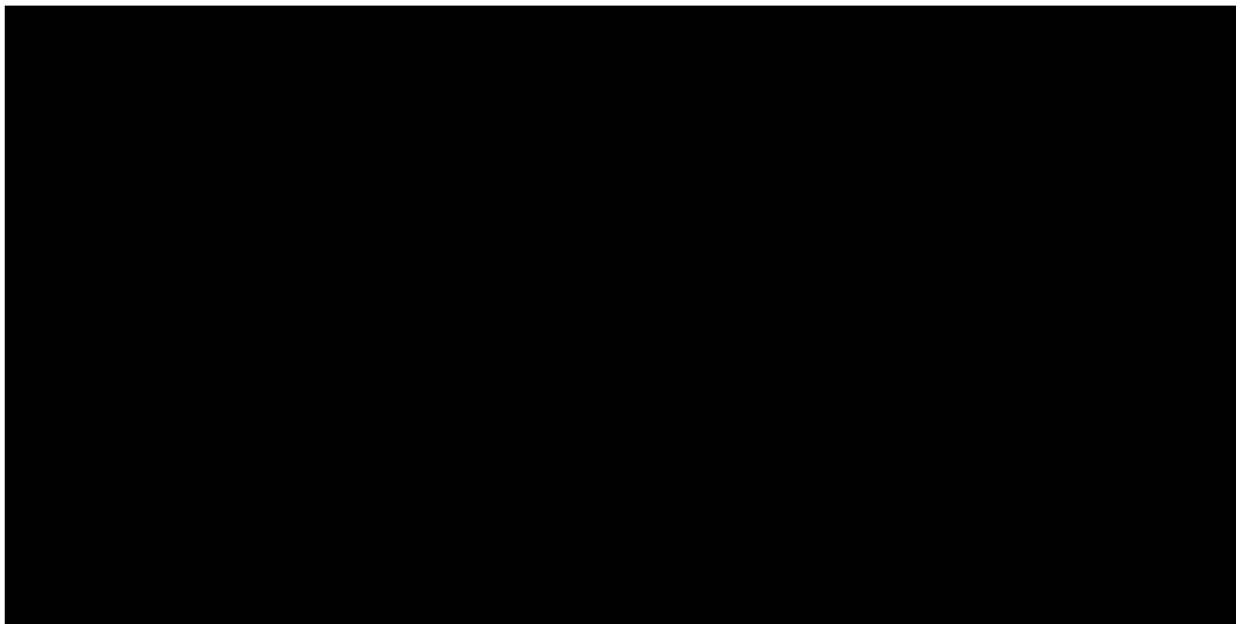
(4) The requirement to develop a miniature two-way agent communicator is still in the system definition phase, although ODE expects to send out the RFP for the display portion of the system in April.

(5) The RFP for a monolithic C-MOS delta modulator/demodulator to be used in a hand-held secure voice radio has been sent out.

(6) The RFP for the facsimile portion of the secure document communications system has been sent out, and ODE is waiting for the proposals.

4. Long Range Agent Communications Section (LORA)

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b. Ground Control Stations - Updating modifications to the [REDACTED] GCS have had to be delayed while essential elements such as the antenna feed and CLO function generator from [REDACTED] were received, modified, and transshipped. Arrangements were also made for additional related training

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25X1A  
for the new COTR who will accompany the [redacted] modification team. Specifically, a [redacted]-tutored GCS training course was established to serve as a standard part of all subsequent training for technicians and engineers assigned to maintaining [redacted] installations. 25X1A2g

25X1A6a  
25X1A9a  
25X1A5a1  
Current plans are to commence the [redacted] update on 15 April. The team will consist of [redacted] (COTR), two [redacted] engineers, and one [redacted] technician. 25X1A5a1

25X1A6a  
Continuing maintenance problems [redacted] have necessitated a visit by an [redacted] representative to repair 25X1A5a1 their tape recorders and several days of work by a [redacted] 25X1A5a1 engineer to repair various defective GCS equipment. Technical problems at [redacted] continue to exceed those of all other GCS's combined.

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c. High-Frequency Systems - The RT-59A prototype unit is currently undergoing QAB evaluation. A production run of 50 units is scheduled for this 10-watt version of the RT-59.

Tests on the RT/B-59 prototype unit are nearing completion, and Drafting has started work on the production drawings. The RT/B-59 is an automatic 20-watt, 3-to-30 MHz transmitter intended for use with the RS-59 system.

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Testing of the Backscatter Sounder was resumed by the vendor at [redacted] during this quarter. Although the results of the tests were encouraging, some improvement is still needed. The system has been returned to the vendor for some design changes.

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25X1C  
Search for a KE-22 keyer replacement was undertaken during March. We believe one of several keyers available on the commercial market can be adapted for this purpose. 25X1A5a1 A code generator manufactured by [redacted], looks promising. [redacted] is scheduled to demonstrate the generator at CCF on 02 April. [redacted] has also been 25X1A6a requested to forward a keyer produced by [redacted] for evalu- 25X1A2d1 ation. The KE-22 is the keyer used with the PD-2 [redacted] 25X1C [redacted] base system.

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A service test model of the BP/BT-35 record/playback system replacement for the Spotmaster BP-12 was received from [redacted] After several improvements were added by the COTR, this unit received favorable reviews during a week of testing at [redacted] 25X1A6a A list of required improvements has been made and will

probably be extended to cover additional suggestions provided by the current QAB evaluation. Then production proposals will be solicited.


d. Coders/Keyers - The first CK-45 production unit was returned to the manufacturer to correct a head misalignment. This unit has been returned to us and is now undergoing QAB acceptance testing.

e. RD&E Projects - Following is the current status of the FY-74 requirements submitted to DD/S&T/ODE:

Miniature Two-Way Agent Communicator - Contracting for the development of the readout device is expected this fiscal year. Contracting for the development of the remainder of the system will slip into FY-75.

IBM MCST/CK-43 - This requirement was canceled.

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 Ground Control Station Improvements - Work on this requirement has been shifted to FY-75.

Miniature Printer with Reusable Paper - Interface specifications are still under development in-house.

In addition to FY-74 RD&E ongoing requirements, the development of an "Integrated HF Antenna System" was added as an FY-75 RD&E requirement and submitted to DD/S&T/ODE.

A draft of a proposed FY-76 RD&E program was submitted to OC-E/CED on 28 January.

f. Publications - The revised TS-27 Battery Cycler Instruction Manual has been received from the printer and is now in the process of being distributed to TS-27 users.

Clandestine Equipment Catalog changes for satellite, high-frequency tactical, and program-wide equipment were completed and forwarded to the Documents Section for inclusion in the next Catalog update.

## B. Covert Equipment Branch

1. At present there are 42 internal production projects and 44 development and QRS projects. In addition, we have 16 external production projects and 20 service contracts.

2. Equipment produced from 1 January 1974 to 31 March 1974:

a. Equipment produced under development and production projects:

40	RS-709	To Stock
38	SR-10 (modified)	To Stock
65	SV/A-4	To Stock
46	CU/C-34 MWO Kit	To Stock
6	CU/C-34 MWO Kit	To QRS
11	RA-802	To Stock
40	RT-803	To Stock
26	BC-801	To Stock
4	FI-60 (Line Filter f/u/w LS-3)	To QRS
2	FI/A-60 (Filter f/u/w LS-3)	To QRS
4	AU-531 (Dummy)	To QRS
4	TA-532	To QAB
25	BC-801	To Stock
7	BE-79	To Stock
3	CU-60	To QRS
15	CU-802 (modified w/new switches)	To QRS
36	RT-532	To Stock
5	One-Drawer Safe (f/u/w SV-4)	To Stock
1	SV/A-4 MWO Kit (for 20 units)	To LIRA
20	SV-4 MWO Kit	To LIRA
6	CT/B-710	To QRS
4	CT-710	To QRS

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24	CT/A-54 (f/u/w LS-3)	To Stock	
10	HS-34 (spare SV-4 handsets)	To Stock	
10	HS/A-7 (spare SV/A-4 handsets)	To Stock	
4	RS/C-506 (modified)	To Stock	
2	BC-506 (repaired)	To Stock	
25	TU-531 Heat Sinks	To QRS	
80	SV-4 MWO Kit	To Stock	
			25X1C
2	RT-532 c/w Antenna [REDACTED]	To QRS	
43	RS-802/803 Activate Cable	To Stock	
7	RS-802/803 Activate Cable	To QRS	
7	SV-4 Spare Parts Kit (update)	To Stock	
50	KA-708 (produced under service contract)	To Stock	
4	CT-71	To Stock	
6	EMBC-224	To LORA	
10	BA-224 (STM)	To QRS	
6	RS-708 Rack Mount Kit	To Stock	
40	AN-803	To Stock	
9	RS-803 Dipole Antenna (proto)	To QRS	
b.	Work Orders processed for operational support:		
1	SR-5 [REDACTED]	To QRS	25X1A
6	CT-71-20 (Cables for LS-3)	To QRS	
3	SR-5 [REDACTED]	To QRS	25X1A
1	ST-5 (soft wire)	To QRS	
1	SR-5 (soft wire)	To QRS	

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	1	Junction Box	To QRS	
	1	CT/D-75 (for Data Commo.)	To QRS	
	1	CT/A-75 (for Data Commo.)	To QRS	
	1	Panasonic Radio (repair)	To QAB	
25X1A	1	SR-5 [REDACTED]	To QRS	
	1	ST-5 (plastic box)	To QRS	
	4	AN-803 (prepare for issue)	To QRS	
	1	RS-709 (prepare for issue)	To QRS	
	2	ST-5 (Velcro board)	To QRS	
25X1C	1	ST-5, 5-Watt [REDACTED]	To QRS	
	1	ST/C-5 (Velcro board)	To QRS	
	c. Equipment produced for other Agency components:			
	1	Control Panel/Switch and Cable	To [REDACTED]	25X1A
	20	Equipment Bags	To [REDACTED]	
	18	Drawer Latches	To [REDACTED]	25X1A
	2	Valve Seats	To Post Eng.	
	2	Coax Adaptors	To [REDACTED]	
	6	AN-10 Antenna Mounting Bracket	To [REDACTED]	
	20	Aluminum Plates	To [REDACTED]	25X1A
	20	Mounting Plates	To [REDACTED]	
	1	Rack Mount Adaptor	To [REDACTED]	
	6	Metal Inserts	To COMSEC	
	5	Mounting Plates	To OC-E/SED	
	537	Board Modifications for KW-7/ FS-96 Interface Requirements	To OC-E/SED	

3. Equipment in production:

a. SV/A-4 Production - 100 Units. Eighty-five units have been completed and placed into stock. In addition, 100 SV-4 and 10 SV/A-4 MWO kits were produced and the various spare parts kits were updated.

b. SV-8 - 6 STM's and 25 Production Units. The first SV-8 STM was completed and given to the QRG engineer. The remaining 5 STM's are being processed under the highest priority. Production of the 25 units will begin as soon as all feedback on the STM's is received. Procurement actions have been taken for the possible production of 50 units.

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c. RS-532 [redacted] System - 6 STM's and 30 Production Units. This project is now completed after a six-month delay waiting for special-order switches. The 30 production units were delivered to stock and the 6 STM's were installed in

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[redacted] switches and delivered to QRS.

d. TL-4 - 30 Production Systems. Six of the 30 systems are being produced on a preproduction basis. The first of these has been completed and accepted by QAB. Production on the remaining 24 systems has begun in the MFAB section. Proposals have been requested under the production service contracts for the manufacture of the PS-44 power supply and the RU-4 and TU-4 plug-in boards.

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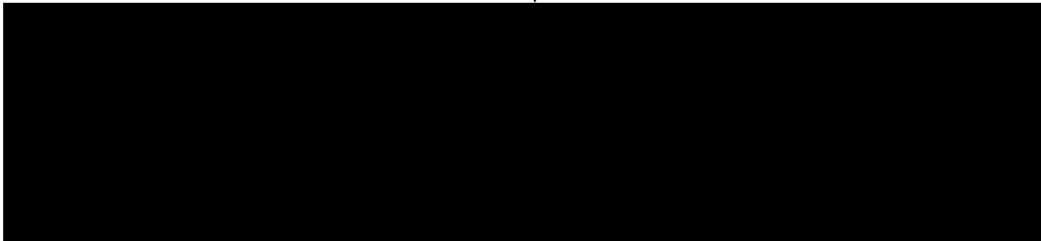
4. External projects:

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a. LS-3 [redacted] Communicator - [redacted] Center is preparing a cost proposal for 50 and 75 LS-3's. The determination of quantity will be made upon receipt of proposal. We anticipate being under contract during the final quarter of FY-74.

b. SV-8 Secure Voice System - The following items are under contract:

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Procurement requests have been submitted or are being prepared for the following:

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C. Quality Assurance Branch (QAB)

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1. ac Power Supply for the KY-28 - A Class B evaluation was submitted on 8 February 1974 covering an ac power supply designed for use with the KY-28. The unit was manufactured by the [redacted] Virginia. While the unit operated well during the operational phase of our evaluation, it did not meet technical specifications. The general criterion was established that the unit must match or exceed the specifications of the 12 Vdc power supply originally designed for the KY-28. As it stands in its present design, this ac supply cannot be accepted as a substitute power source for the KY-28.

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2. RU-523 - A Class A evaluation was completed on the RU-523 voice privacy repeater (RS-523 systems) on 8 January 1974 to determine whether the unit met manufacturer's specifications and to assess its overall performance. Some technical difficulties were encountered initially, but tests were completed on one unit (the second failed early in the testing program). Generally speaking, the repeater was found to be suitable, permitting reliable repeater communications over a range of up to [redacted] Operational comparisons were made between this system and a clear-text, narrow-band repeater of comparable output power. It was found that the RU-523 would reliably cover up to 60% of the range covered by the narrow-band voice repeater.

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3. [redacted] PS W-44 Power Supply - Evaluation of this power supply was completed on 21 January 1974 to determine its suitability as a power source for the SV-8 secure voice system. Although judged satisfactory, there are some areas of question that need to be resolved; namely, transformer operating temperatures. The present output current limit of one ampere is very

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near the total current required to operate the SV-8. These must be resolved before the power supply can be considered to be acceptable for the SV-8 system.

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4. RS/A-, B-, C-803 - This [redacted] system was subjected to a complete Class A evaluation and was completed on 20 February 1974. It was found that all three versions (three frequency bands) either performed equal to or better than the specifications.

5. SX-6 - The SX-6 spread-spectrum UHF transceiver evaluation was completed on 26 February 1974, and the unit was found to operate satisfactorily. It was determined, however, that the units were lacking in adequate harmonic attenuation and system distortion and that the RF output power control did not offer positive control of the output power reaching the antenna.

6. WTA Model TI05M-1 - A Class A evaluation was completed on the WTA 5-watt VHF transmitter on 8 March 1974 to determine its suitability as the transmitting unit for the SV-8 secure voice system. It was found that the transmitter was acceptable only if harmonic and spurious radiations are reduced and output efficiency is improved while operating at full 5-watt output.

7. Three Receivers for the SV-8 - A Class A comparative evaluation was submitted to the Documents Section on 14 December 1974 covering the [redacted]

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[redacted] and [redacted] receiver to establish their suitability for the SV-8 secure voice system. Generally, it was established that, while the receivers were satisfactory, there was a need for refinement of the data output characteristics before they can be effectively used with the SV-8 system.

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8. General - During the quarter QAB completed 126 evaluation projects. The [redacted] facility processed the following:

Allocation 26 :

[redacted]

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[redacted]

:

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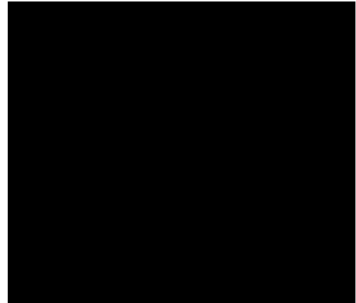
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(4) Combined OC-E/ESD/MSB and OL/SD/SMB stock procurement

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- (a) Funds obligated by MSB for stock items.....\$
- (b) Funds obligated by OL for OC type stock items.....\$
- (c) Total funds obligated for stock procurement 3rd quarter.....\$



b. During the 3rd quarter, MSB submitted 37 stock procurement requests totaling 123 line items. During the same period, OL submitted 145 stock procurement requests for OC type items totaling 330 line items.

c. Actions taken in support of the 7908 Property-In-Use Account were as follows:

<u>TYPE OF ACTION</u>	<u>NUMBER</u>	<u>LINE ITEMS</u>	<u>DOLLAR VALUE</u>
Property Turn In's	10	14	NA
Request for Loan	1	1	NA
Request for Supplies and Equipment	45	197	NA
DCN Transactions	10	26	NA

2. Procurement Actions for Period

The significant procurement actions for the period were the PRS-4 for a total of \$131,853.53, and various SV-8 components for \$201,683.00.

3. General

OC-E/CED has declared the RS-49 limited standard. Action was taken to identify all RS-49 components and parts (156 line items). In addition, the Office of Logistics has been advised to change these items from standard to limited standard.

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4. Teletype and Crypto Management

a. The entire balance of 40 modified Teletype SMD's to MIL-STD-188 for SKYLINK was transferred from the TCM Shop to the Equipment Section of FAB.

b. The first semiannual ordering cycle for NSA controlled parts and components for warehouse stock replenishment was prepared and submitted to SMD/OL for processing.

c. To provide tighter controls for special types of telephone and communication cables stocked at the [REDACTED] 18 types were assigned tech control numbers and transferred to Allocation 21. Also, to alleviate the problems of long lead times inherent with cable orders, the reorder points were increased to levels which will, hopefully, maintain stocks on hand for one year including the reordering interim.

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d. As a result of a review for OL/Cataloging, the primary purpose being to validate part numbers with their respective manufacturer's codes, 22 out of 68 Teletype/Crypto related items were declared excess with their respective stock numbers deleted from the system. Since there were no assets on hand, no loss of funds was involved.

e. Teletype/Crypto material declared excess by the field and returned to the TCM Shop for disposition was valued at \$24,225.00. The breakdown is as follows:

<u>PIECES</u>	<u>TYPE</u>	<u>VALUE</u>
[REDACTED] 53	TTY Mod Kit	\$ 4,200.00
[REDACTED] 199	KW-26B Packages	\$ 18,068.00
[REDACTED] 26	KW-26 Packages	\$ 1,957.00

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f. Funds expended for the procurement of Teletype/Crypto spares this fiscal year, as of 31 March 1974, is \$159,585.00.\*

\*(1) Includes four sets of KY-28 boards (unclassified) ordered for the R&R Section, TSB, valued \$8,856.00.

(2) Two sets of KW-7 circuit cards for [REDACTED]. 25X1A6a

g. The TCM Shop processed 470 requests consisting of 5,945 line items valued at \$187,700.00.

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5. Machine Records Unit

a. The total number of requisitions processed was 1185, consisting of 4967 line items.

b. A total of 354 CARS (Catalog Action Requests) were processed.

(1) 214 CARS were prepared for new items.

(2) 140 CARS were prepared for miscellaneous actions.

c. A total of 22 CARS were changed by Coding Sheet actions.

B. Technical Support Branch

1. General

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a. Traffic through the MAX-II tributary station (TECHREQ), RUEIFR, [REDACTED] continues to increase. When first opened at the beginning of this reporting period, the first four-week total was 106 messages. It is now up to 90 messages received per week.

b. The handbook on alignment procedures for the SG-75A exciter, complete with color photographs, has been completed and distributed.

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c. TSB hosted a PACE Printed Circuit Board Repair Course at [REDACTED]. Seven persons from TSB, three from CED/Lab, and two instructors from CMD were in attendance. The lectures and demonstrations presented in this course were video-taped by TSB for future reference and instruction.

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d. A second Select-O-Shelf was installed at TSB/[REDACTED] at the beginning of this reporting period and is being rapidly filled with Repair & Return support items. Because of R&R material storage requirement increases, a study is now underway to determine our short and long-term storage requirements.

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e. Engineering Technical Bulletin, ETB 64-5, Test Instrumentation Standards, was compiled and distributed during this quarter. This manual was prepared to provide the technical data for requisitioning test instruments which will meet a large percentage of the measurement requirements.

f. Some interesting facts regarding the Repair/Return Section activities during this quarter are given below:

(1) SERVICE/TECHREQ's - Incoming, 836; Outgoing, 197

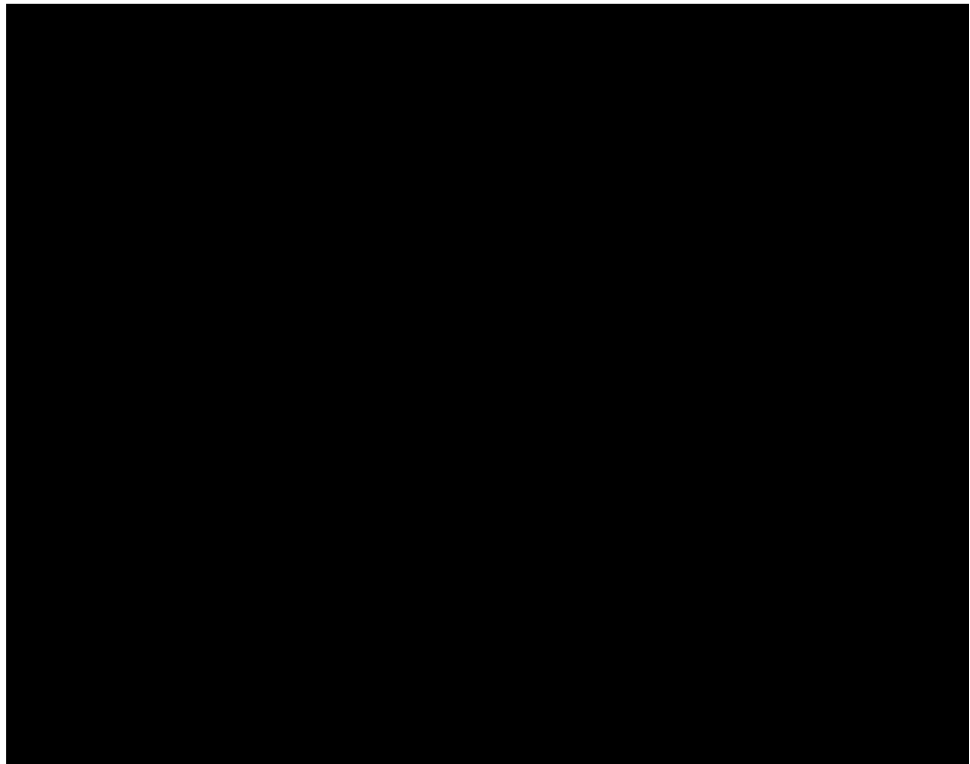
(2) Repair & Return Transactions - 2,534  
(Increase of approximately 900 over previous quarter.)

(3) Crystal Production - 3,481 vendor manufactured, Lab tested. 1,372 in-house manufactured and tested.

(4) PTI/Rehab - 307 pieces of equipment turned in to stock or repaired by this Section, 94 documents.

2. Personnel

a.



b.

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III. STAFF ENGINEERING DIVISION

1 January - 31 March 1974

A. Systems Design Branch

1. Domestic Systems Section

a. Cable Dissemination System (CDS)

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(1) During this quarter the CDS Proposal Evaluation Team completed its initial technical evaluation of the [redacted] proposals. The team presented its findings to OC management.

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(2) As part of the proposal evaluation, visitations were made to the facilities of [redacted] 25X1A5a1

[redacted]

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(3) Following the preliminary evaluation, detailed technical discussions were held with each of the three bidders to clarify portions of their proposals. Each bidder was asked to describe in detail their analyses used in sizing the proposed systems. Based on the new information gained at these meetings, the three proposals were re-evaluated and the Proposal Evaluation Team recommended that the [redacted] proposal be disqualified for technical non-compliance.

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(4) Following the completion of the technical evaluation and company audits, formal cost negotiations were held with [redacted]. At the end of each session, a memorandum of understanding, stating the terms and cost of the proposed systems, was initiated.

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The [redacted] bid was found to be superior technically and lower in overall cost and was recommended by OC for the CDS contract. [redacted] concurred with

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the selection on 21 February.

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25X1A5a1 (5) The three bidders were soon notified of the source selection by OL and debriefings for [REDACTED] and 25X1A5a1 [REDACTED] were scheduled.

(6) During the quarter, a CDS Project Team, composed of representatives from several Agency and OC components, was organized to facilitate coordination of the project. A CDS Project Plan was written and distributed to these components. (Reference: OCE-M-74-166, dated 22 Mar. 74; OC-M-74-168, dated 25 Mar. 74.)

25X1A5a1 (7) Near the end of this reporting period, representatives of [REDACTED] arrived here for three weeks of intensive briefings and discussions. Briefings on the Cable Secretariat, Signal Center, ACT, DDO Intelligence Watch, CRS MAD system, and CIA Operations Center were attended. The information exchanged at these meetings has supported the joint [REDACTED] /Agency effort to prepare a detailed functional design specification.

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b. OJCS Switch

In view of the cut in FY-75 funds budgeted for the OJCS Switch project, an automated circuit switching system will not be procured. As an alternative, enough funds will be made available for OJCS to lease COMTEN processors to do the job and for OC to provide a tech control facility, expanded patching capability, and manual line switching system.

c. OEL/SSOC Switch

OC-E was informally advised that the OEL/SSOC circuit switch project will be reinstated for FY-76 budget review. The paper work necessary for OC to take further action on this project will be provided by OSA.

2. Voice Communications Section

a. Washington Area Secure Switching Project

(1) As part of the information requested by the OC Executive Board OC management was briefed in January on the physical security aspects of the Agency's secure phone system and comparisons were shown with the Red Button system.

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(2) A memorandum was sent to the Office of Security 30 January, requesting that they determine what measures had to be taken to upgrade the classification level of the Red Button system for Top Secret/Codeword traffic and to allow interconnection with other secure telephone systems. The Office of Security performed a study of the Red Button system and responded on 28 February 1974. The response stated that it was not recommended to consider upgrading of the Red Button system and incorporation into other secure systems. The study showed the Red Button system to have serious problems in the areas of personnel security of leased maintenance, traffic capacity and numerous physical and technical security problems.

(3) DCA is continuing work on the Phase II AUTOSEVOCOM system design. DCA held a Phase II Secure Voice Phasing Group meeting on 31 January 1974. It was indicated that the plan is scheduled to be submitted to JCS by July. The RDT&E panel stated that the NSA [REDACTED] A/D converter project had been shelved in favor of the [REDACTED] for use in the [REDACTED] telephone terminals.

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(4) The Request for Proposal for the Headquarters Tandem (Trunk) Switch and Operator Console(s) and the associated performance specification were mailed to the following prospective bidders on 1 March 1974:

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[REDACTED]  
pre-proposal conference was held at 711 Ames Building. All of the above Bidders attended the conference except [REDACTED]. At the pre-proposal conference the proposal due date was extended from 29 March to 15 April 1974.

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b. Facsimile

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(1) OEL Facsimile: The DACOM facsimile units were installed at Headquarters and [REDACTED] in February 1974. All testing has been completed and the units are now fully operational.

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(2) OTS Facsimile: On 29 March OTS placed an order for two DACOM 412 facsimile units to be used between South Building and [REDACTED]. OC-0/D is expected to install these units in June 1974.

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c. Secure Voice System Engineering

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A study is being performed to determine if secure voice quality can be improved by realigning secure voice levels and modifying the 2/4 wire hybrids. The desired result is to provide acceptable voice quality for NPIC, Headquarters and [REDACTED] subscribers making narrowband HY-2 calls. The study is approximately two-thirds complete.

d. Headquarters Area Transmission System Project

The initial draft of a cost-effective plan to connect Agency buildings in the Washington area with secure voice and data facilities has been completed. This study is now being reviewed prior to a final report scheduled for completion before 1 May 1974.

e. Bulk Encryption

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(1) Four HN-74 and HY-12 units were delivered as part of the CY-104's which will provide bulk encryption between Headquarters and [REDACTED] and Headquarters and NPIC. The KG-34's were part of the twenty received on loan. The HY-12's were recently shipped back to NSA for modifications due to the implementation of 48K bit data channels. This same modification will provide the necessary wiring for a KY-3 interface card NSA had developed. NSA reports that most of the components for the 48K bit data channel have been received. Delivery of the HY-12's and the data channels are scheduled for June 1974.

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(2) [REDACTED] has indicated that the VICOM SM-T high speed multiplexer should replace the VICOM D2 multiplexer in the CY-104 system because it would meet their requirements better than the standard CY-104.

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[REDACTED] engineering tentatively plans to develop a system using the HN-74, KG-34 and SM-T version of the HY-12. This system would separate the three major units listed above for use in the signal center environment, where crypto is separated from both the red multiplexers and black modems. The CY-104 has all units packaged in one equipment rack.

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(3) The secure voice trunk scheduled to link NSA [REDACTED] thru the Agency microwave system [REDACTED] has been cancelled by NSA.

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(4) [REDACTED] Engineering will fund the purchase of forty KY-3 interface channels for the VICOM SM-T multiplexer. SYB/VCS will act as the COTR ensuring that specifications are met.

f. Office High Speed Printer

Indications are that requirements for medium speed, high quality printers are being relaxed in favor of slow speed, low cost matrix printers such as the Texas Instrument unit employed in the Operations Center.

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3. Computer Systems Section

a. DATEX

(1) Two more program reviews were held in [redacted] and some schedule changes resulted from the second review. The third DATEX program review was held during the second week in January and no major problems were noted. Definitions of the terminal operation, message logging function and line monitoring requirement were agreed on during the meeting. By the time of the March review more slippage than that noted in the last quarter in the area of software development was evident and a revised program was presented by [redacted] and is still undergoing review. System activation is now scheduled for 19 November rather than 19 September 1974. It is possible that the programmers will be putting in some overtime to meet the new schedule.

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(2) A meeting was held in February with representatives from [redacted] OC, the [redacted] and Computerized Message Relay (CMR) to discuss the operating procedures of the CMR. A working copy of the "CMR/Terminal Interface" document and discussions answered most questions immediately and the others were answered via telephone and additional documentation.

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(3) A C-2 conditioned line was ordered and installed between the dedicated test bed in [redacted] and the DATACOM facility so that the Line Control Routines (LCR's) under development could be more thoroughly checked out prior to equipment installation on site. This capability for checking LCR's should significantly reduce the number of problems encountered when the system is delivered.

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b. ARS

(1) Headquarters planning for installation of the first ARS at [redacted] was presented to [redacted] during a site survey on 7 - 10 January. Visa difficulties precluded the [redacted] implementation engineer from accompanying the COTR, [redacted], as planned. Potential problem areas concerning a 4 1/2" subfloor clearance and inadequate A/C distribution were noted during the survey. The ARS Working Group consisting of

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OC-O/SOD, OC-CS, OC-S and OC-E/SED/FAB representatives were briefed on the findings of the survey upon [redacted] return.

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(2) [redacted] received production hardware at the [redacted] test bed in January. Operating system software was interfaced with the prototype production system and Communications Service and Input Segment Service application programs were refined for an initial system integration. A limited switching capability was demonstrated during a design review in [redacted] 29 January - 1 February. 25X1A

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(3) The limited switching demonstration although an important milestone in the development effort, revealed the large volume of programming work remaining. [redacted] indicated during the review that although their goal was completion and integration of all program modules by 8 March, a continuing software refinement phase would be necessary through 5 April. This represented a change in development strategy from their original intent to complete system development in March resulting from a later site availability date of 1 June. It was agreed that two weeks would be made available for pre-acceptance and load testing in-plant. The January design review surfaced the important revelation that very few differences in available operator commands would exist between the MAX and ARS systems.

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(4) An additional \$28,598 was also negotiated for hardware changes and addition of an assembly capability to ARS-I in January. The additional cost for hardware changes only affecting ARS-II and III was \$18,724 combined. A proposal for MIL-specification packing was requested from [redacted] for shipment of ARS-I to [redacted].

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(5) In mid-February [redacted] announced that [redacted] was discontinuing production of the medium speed line printer chosen for ARS. A more costly Data Products model 2230 drum printer was selected as the replacement at no projected cost or delivery impact to the Government. The first draft of the ARS test plan was received on 21 February. It was apparent that very little work had been put into updating a previous MAX test plan. Messrs. [redacted] spent many hours updating and correcting the plan in preparation for the next design review. 25X1A

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(6) Concept papers regarding the use of ARS were prepared during the week of 20 February. The papers addressed respective viewpoints on required station manning for ARS to be incorporated in a memorandum to Chief, OC on this subject.

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(7) To accommodate site equipment delivery problems, the ARS-I installation at [REDACTED] was re-scheduled to commence 1 July 1974. [REDACTED] also acknowledged the need for additional time in development of ARS. The course specification for ARS programmer training was received from CMD in late February and forwarded to OL for solicitation of a proposal from [REDACTED].

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(8) The final site interface specification for ARS-I and a revised test plan were received from [REDACTED] during the week of 13 March. [REDACTED] advised us that an inter-processor buffer module was unnecessary to the design of ARS and that they would undertake a financial analysis to determine the cost savings to the Government that would result from its elimination.

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(9) [REDACTED] attended a design review in [REDACTED] 28 - 29 March. Although [REDACTED] affirmed their ability to begin planned testing of ARS on 6 May, it was apparent they were hard pressed to do so. A majority of the review was spent in a thorough discussion of necessary additions and revisions to the test plan. Dissatisfaction was expressed with late scheduling by [REDACTED] of five weeks of programmer instruction to begin in August. If [REDACTED] is unable to schedule an earlier instruction date, the new ARS programmers will proceed to the ARS-II installation scheduled for mid-September for necessary OJT.

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c. MAX-IA

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(1) An additional Line Concentration Module (LCM) and four P.C. cards for on-site maintenance of the [REDACTED] disc file were purchased for MAX-IA during the quarter. A long outstanding second spare Loop Coupler Prime (TTY LCU) was also delivered to [REDACTED].

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(2) In preparation for a planned 600 BPS link between MAX-IA and MAX-III, a [REDACTED] Modem Termination Unit (MTU) was successfully tested at MAX-II utilizing 600 BPS timing. Hardware now available on-site at [REDACTED] will be utilized to terminate this circuit in both MAX-IA and MAX-III.

(3) Modified LCM's to replace LCM's now in use with MAX-IA are still outstanding from [REDACTED] 25X1A5a1  
Acceptance of the MAX-IA system in November was contingent upon delivery of new P.C. versions including a security modification to prevent channel jumping in the event of certain component failures. [REDACTED] 25X1A5a1  
[REDACTED] recently indicated that the new versions would not be produced until September due to parts shortages. In that ARS will utilize the same LCM, we have applied pressure for an earlier production run scheduled prior to in-plant testing of ARS in May.

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(4) [REDACTED] has announced plans to alleviate a disc file data retention problem by replacing existing disc file cabinets at MAX-II, III and IA with a cabinet providing greater physical separation between disc file drawers. Replacement at MAX-IA has been tentatively scheduled for May.

(5) The flurry of maintenance action reports and requests received during the previous quarter have appreciably declined. It appears that MAX-IA is emerging as a comparable contender for reliability records set by its CONUS predecessors.

d. BEST

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(1) A review of maintenance support efforts for the FS-96A and FS-96B multiplexers occurred on 28 January 1974 at the [REDACTED] Technical Support Facility. A memorandum recommending transfer of the two FS-96A units (previously dedicated to [REDACTED] to [REDACTED] and Engineering Support Division, (ESD), and serviceable parts salvage of an FS-96A unit recently transferred from [REDACTED] to ESD was submitted.

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(2) All logic necessary for upgrade of the [redacted] BEST to 31 channel operation was received from [redacted] and processed for delivery to [redacted] by 1 March. A modification work order for conversion of the FS-96A multiplexers to low level MIL-STD-188C operation has been prepared.

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(3) At present, in-house repair efforts for the FS-96A/B are at a standstill until the FS-96A unit assigned to OC-E/SED/FAB is transferred to the OC-E/ESD/TSB/R&R property account for use as a maintenance test bed. Authority to piece part salvage the FS-96A now assigned to [redacted] is also keyed to this transfer which is awaiting validation of a lack of operational requirements for the equipment.

4. Network Design Section

a. Network Studies

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Three studies are being pursued by NDS: (1) HF Backup, (2) Alternate base planning and (3) [redacted] 25X1A2d2 (12-PAC). They are all very closely related. Most pressing is the present need for communications back-up in the event of catastrophic failure or loss of a base station and/or associated support systems. The transportable communications approach [redacted] has been given most consideration. Facts and figures from various sources have been compiled to establish the pros and cons of the fly-away van concept. A draft report is being prepared. Alternative solutions are also being considered including improved HF Back-up [redacted] and employment of CAFT as multi-relay network control.)

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b. CAFT

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(1) During this reporting period, all selected proposers were visited at their plants. The CAFT RFP and [redacted] Addendum were completed and mailed. [redacted] barely made the mailing deadline due to several delays in their effort to resolve various discrepancies and conflicts which were surfaced by the CAFT team.

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(2) One week after the RFP's were distributed, pre-proposal demonstrations of the experimental CAFT system were given to engineers, programmers and program managers representing the bidders.

(3) These demonstrations were followed by a Pre-proposal Conference. Answers to all questions raised during the conference week were committed to writing and disseminated to all contractors.

(4) Other related actions completed during this reporting period were as follows:

25X1C4a (a) Several Agency and [redacted] management personnel were briefed on the CAFT program in conjunction with demonstrations of the experimental system.

(b) A Technical Evaluation Plan was completed and coordinated with Contracts Division, OL. A Cost/Benefit Evaluation Plan has been drafted and is under review at this time.

(c) OC-O/SOD has been requested to furnish a list of the first twenty-five terminals to be considered for CAFT installations. Compilation of this list is nearing completion.

(d) An RFP review was held with OJCS prior to the pre-proposal conference.

c. CY-6

25X1A6a The CY-6 was installed in Headquarters in November 1973. Since that time the CY-6 has been undergoing operational evaluation by [redacted] personnel. During this evaluation, several hardware failures occurred on the CY-6: two magnetic tape deck problems and one bad memory chip. All problems were corrected and the CY-6 was returned to [redacted] for further operational evaluation. After completion of evaluation and testing, SYB will release the CY-6 system to [redacted] for operation.

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5. General

a. Personnel

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[REDACTED] entered on duty with the Branch during the quarter and is currently engaged in several special studies. Near the end of the quarter Dr.

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[REDACTED] departed the Branch to assume the duties of Chief, Staff Engineering Division and [REDACTED] assumed the duties of Acting Chief, Systems Design Branch.

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b. Representation

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During the quarter [REDACTED] continued to participate in the activities of the Federal Telecommunications Standards Committee, the OC ADP Applications Committee, the Joint Federal Task Group on Link Control Procedures and Message Formats, and the Text Editing and Processing Committee.

c. Communication Requirements Determination Program

(1) The OC-E study draft addressing current requirements has been completed and distributed to other OC components for comment and additional input. The resultant OC paper will be presented to the representatives of the other Directorates and Offices for their validation or comment.

(2) Projections of voice communications requirements have been received from virtually all of the Directorates and Offices and are being reviewed and integrated. The resultant information will be included in the final Requirements Determination paper and will also be used as an input to the Voice Communications Program.

d. Assistance to the Operations Center

Personnel of OC-E, OC-O and OC-O/D have assisted the CIA Operations Center in their search for a means of improving the capability of the inter-Agency document coordination system. This has included the provision of information on various facsimile and text editing systems with implementation cost and time estimates.

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c. [REDACTED]

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(1) [REDACTED] Transmitter-Site Expansion -

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a. The final A&E plans were delayed by [REDACTED]. The plans were received and reviewed and a meeting is scheduled for finalization of the bidder's packages the week of 2 April.

b. The GFE list has been placed on order and no problems in delivery scheduling are anticipated.

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(2) [REDACTED] Relay Site 188C Conversion -

a. The commencement of conversion of the shielded enclosure equipment to 188C has been slipped one month, or to 1 May. This was necessary due to delays in availability of some equipment, primarily the AK-4s.

b. The ARS installation is now scheduled to begin 1 July.

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(3) [REDACTED] Antennas:

a. The TCI vertical LP is currently in the installation phase at the receiver site.

b. Bids were received and funds transferred for the installation of three nested rhombics at the transmitter site. The ground hardware has been air shipped, with the remainder to arrive o/a 26 April by sea.

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(4) [REDACTED] 250 KW Generator - The T-site experienced a major breakdown of one of their 250 KW generators. We expedited shipment of a replacement unit via [REDACTED] which arrived on site 5 March. The malfunctioning unit will be returned to the US for repairs and will be shipped to [REDACTED] for installation at R-site, replacing a presently installed 100 KW system.

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D. [REDACTED]

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(1) [REDACTED]

a. The R-site power switchgear was in-plant inspected and shipped to the site in March. The building expansion was completed and the enclosure installation began in February. It was scheduled for completion by the end of March.

b. A contract was initiated for the T-site building expansion in March and construction was renewed on the T-site powerhouse. Our latest SITREP reports construction is at the 30% level.

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c. A team composed of [REDACTED] and OC-E representatives is scheduled to survey the enclosure in preparation for the ARS installation early in April.

d. The antenna work is completed except for installation of the TCI RLPs.

25X1A2d2

(2) [REDACTED]

25X1A6a

[REDACTED]

25X1A

25X1A9a

b. [REDACTED] OL packing specialist, is assisting in packing out the ST-3Bs which are to be shipped to [REDACTED] 25X1A6a

25X1A6a

25X1A6a

(3) [REDACTED] - Official approval was received to establish a commo station in [REDACTED]. A [REDACTED] survey team has visited the site and we are awaiting their comments. We supplied a KWM-2A and enough equipment to establish a CW facility as an interim measure. A complete PRS-2 was included in [REDACTED] FY-75 program for this station. 25X1A6a

25X1A6a

25X1C4a

(4) [REDACTED] - Funds were transferred to the [REDACTED] for the transformer required for the air conditioning system. All that remains to be done

25X1A

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25X1A2d2

25X1A9a

25X1A5a1

(2) [redacted] - Messrs. [redacted] and [redacted] 25X1A9a  
[redacted], OC-E, are scheduled to visit [redacted] 25X1A6a  
in early April. The purpose for the trip is  
to plan the UCPS installation, repair generators,  
and assist in the ARS survey. [redacted] 25X1A9a  
and the [redacted] representative will join them for  
the survey on 4 April.

f. General

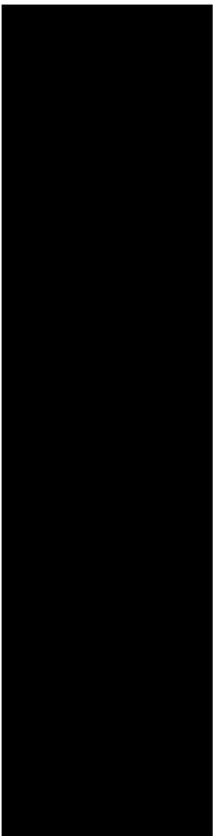
(1) We have received and are reviewing the  
FY-75 program from [redacted]. 25X1A6a

(2) Except for testing the isolation  
between the signal lines and AC power lines  
in our black signal isolators (DOI's), the  
discussions [redacted] for developing 25X1C4a  
standardized CCC AC power and ground installation  
criteria have been completed. The formalized  
agreement, however, is being held pending success-  
ful completion of the above tests. Detailed  
wiring diagrams are also being prepared which  
will further explain the standard criteria.  
Discussions [redacted] to arrive at 25X1C4a  
a set of mutually acceptable signal isolators  
are planned in the near future.

25X1A3b

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25X1A6a

Requires second hi-speed modem.

An instructor is presently conducting operator training. This terminal is expected to be operational during the week of 7 April. Requires replacement materials which are on order and scheduled for shipment at the earliest possible date.

This terminal has been checked-out and is in a standby status. The operator instructor is scheduled to arrive on-site o/a 12 April.

The area technician is now on-site installing a new paramp. Operational activation is expected during the week of 7 April.

This station is up and testing, and is expected to be activated during the week of 7 April.

B. Terminal Equipment

(1) SC-1 Procurement - Twenty-one SC-1 earth terminals have been accepted and are either installed or on their way to field locations. A request for proposal for five, ten or fifteen additional terminals is now in the hands of five prospective bidders. Bids are due-in by mid-June and a contract award is expected by mid-July.

(2) EMI Suppression Modification - An analysis of the SC-1 terminal has identified the areas of susceptibility of the terminal and prototype modification kits are now being prepared to correct the problem.

(3) Phased Array Antenna - The antenna is presently undergoing performance tests. Preliminary results indicate that the specifications are being met. Completion of tests and delivery of the antenna is expected in the fourth quarter.

(4) Synthesizer Modification - The synthesizer has been successfully reduced in volume to one-half its previous size. Production units are now being accepted and deployed for operational use.

25X1A6a

(5) SC-2 Procurement - On-site acceptance tests for the [redacted] SC-2 terminal were completed during January, and A/T's for the OEL terminal are scheduled for 15 April. Procurement action for [redacted] SC-2's at [redacted] is proceeding with [redacted] scheduled for FY-74 purchase and [redacted] for FY-75 purchase.

25X1A

25X1A6a  
25X1A6a  
25X1A6a  
25X1A6a

25X1A6a

(6) [redacted] Installation - Installation of equipment at [redacted] is essentially complete. The Timeplex isochronous multiplexer is due from the manufacturer, and will be shipped out when checkout is complete. Vocoders and junction boxes have yet to be installed.

25X1A6a

(7) [redacted] Landline Equipment - With the exception of the multiplexer mentioned above, all equipment for the [redacted] trunk has been installed. The sync signal interface unit required to interface the multiplexer out-of-sync-signal with the MAX fault monitor unit and the AK-4 "TD Ready" inputs has been checked out by [redacted] personnel. Testing of the [redacted] - Headquarters C-2 lines is underway.

25X1A6a

25X1A6a

25X1A6a

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3. Equipment Section

a. AK-4 Procurement

25X1A5a1

Due to problems in obtaining MS Connectors, [REDACTED] has informed us that the AK-4 delivery has been delayed. The new delivery schedule is as follows:

13 racks on 3 May 1974  
13 racks on 3 June 1974  
8 racks on 3 July 1974  
8 racks on 3 August 1974  
8 racks on 3 September 1974

b. Teletype Line Converter (TLC-1)

A Request for Proposal has been sent to five local contractors requesting that bids for fabricating 25, 50 and 100 TLC-1s be returned to contracts by close of business on 2 April 1974. Once the contract is awarded, provisions will be made for the delivery of a pre-production model for an operational check. This unit will be mounted in an M-28 ASR and used as the basis for writing the installation instructions and manual.

c. CCU/KG-13 Junction Boxes

25X1A5a1

Twelve junction boxes and six sets of cable assemblies (a set consists of 12 cable assemblies, to be used as upper or lower) were ordered and received through military channels. These units were sent to [REDACTED] to be modified to make them compatible with our CCU units. They were modified for use as lower assemblies only and are to be used at SKYLINK installations.

d. CSR-6B Modifications

25X1A5a1

[REDACTED], has designed and delivered four modification kits for the CSR-6Bs. The kit will eliminate the problem of not switching to the alarm condition during CSR or external power failures. This correction is the result of an observation by an alert [REDACTED] technician.

25X1A6a

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e. KW-26C MIL-STD-188 Modification and Rehabilitation

The contract with the [REDACTED] to modify and rehabilitate 75 sets of KW-26Cs is proceeding on schedule. As of 28 March, 27 sets have been delivered and 5 more will be ready for pick up by 2 April 1974.

25X1A

f. CSR-5(A)

25X1A6a

[REDACTED] have responded to an all areas dispatch requesting inventories of CSR-5(A) boards.

The supporting information contained in the dispatch outlined a program that is under consideration for updating the CSR-5(A)s by replacing or modifying certain printed circuit boards.

Preliminary figures show that the undertaking is considerably larger than anticipated and that it will cost \$13,000 alone to modify, or \$38,000 to replace [REDACTED] unreliable circuit cards. These figures are based on \$175 per board to buy and approximately \$60 per board to modify using a commercial contractor.

25X1A6a

When all areas have responded and the total quantities ascertained, a recommendation will be made regarding the best way to go.

g. HFL-1000 Replacement

(1) The draft specifications for the HFL-1000 replacement LPA has been reviewed and only a few minor changes remain before the specifications are ready for issue.

25X1A5a1

(2) During February an RF-130 1KW transmitter was borrowed from [REDACTED] at no cost to the Government. This equipment was provided for evaluation. The unit has been satisfactorily tested against all specifications. The RF-131 HF exciter provided with the system was compared to the SG-75A and found to be spectrally cleaner. The broad band

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noise was less than -80 dB which is better than the unmodified SG-75A but not as good as the SG-75B. All in all, it is a very nice system. It is also easy to operate since it is automatically tuned when used with the RF-131 exciter. With the SG-75A the only tuning required is setting the bandswitch to the proper band when changing frequency.

h. VADAC-III

(1) Initial Procurement of 50 Units

25X1A5a1

██████████ was given approval to go into full production of the VADAC-III on the original contract for 50 units in January. To date, three units have been received and two others have been shipped from the plant. An Engineering Change Proposal requesting additional compensation for effort expended to meet NACSEM 5100 TEMPEST requirements was submitted for \$157,466. This was negotiated down to \$78,610.

(2) Additional Procurement of 25 Units

25X1A5a1

A Request for Proposal was sent to three manufacturers at the end of the last quarter for 25 additional vocoders. Only one responsive proposal was received. ██████████ responded with a proposal of \$357,205 for 25 VADAC-IIIs, 10 sets of spares and associated documentation. This was further negotiated to a final contract price of \$330,390. Delivery of these units is to start one week after the last unit is delivered on the present contract.

i. Polarization Diversity Receive Antenna

25X1A5a1

A Request for Proposal for procuring Polarization Diversity Receive Antennas was issued in late February to four manufacturers, and three proposals were received. ██████████ was chosen as the most responsive with a price of \$654 per antenna for a quantity of five each. A procurement memorandum has been forwarded to OC-E/ESD/MSB and a contract will be negotiated early next quarter.

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j. CP-16 Vocoder Control Panel

The first draft of the CP-16 has been completed and is now being reviewed within OC-E. The procurement package and a Request for Proposal will be sent to OL/PD in April.

k. HYX-4 Replacement

The specifications for an extension telephone for use with the VADAC-III and CP-16 are nearly complete. The instrument will be similar to the HYX-4 except it will have an indicator lamp to indicate non-exclusive use of the voice circuit, and a push button to be used to signal the CP-16 operator.

l. OI-4 Vocoder Optical Isolators

25X1A2d2

Twenty additional OI-4s have been ordered for use with the VADAC-IIIs to be installed in the [redacted] terminals. An additional 22 R113Bs have been ordered to retrofit the first 22 OI-4s.

m. MS-200, Alarm Monitor System

25X1A5a1

The multiplex isolators for the prototype system have been ordered and received. The display panels, presently being built by [redacted] 25X1A5a1, will be delivered in mid-May. When delivered, a demonstration of the system will be arranged for all interested parties.

n. Turn Key Shielded Enclosure Installation

25X1A9a

Specifications on a representative enclosure, including installation, were prepared as part of a package sent to OL/PD to request competitive proposals. After extensive discussions between [redacted] 25X1A9a, of OL/PD, and [redacted] of OC-E, the requested procurement action was cancelled. It has been further agreed that OC-E/SED/FAB will consolidate their annual FY-75 shielded enclosure requirement which will be competitively solicited to [redacted] Corporation. Interim requirements will be handled in a manner mutually agreeable to OC-E/SED and OL/PD.

25X1A5a1

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o. MAPS/DAC

(1) Key Building

Two Delta Data VDUs and a Hetra RJE Terminal have been installed in the Data Access Center (DAC) shielded enclosure. Terminal familiarity and procedural testing is being conducted prior to activation.

(2) Ames Building

25X1A5a1

(a) The "stop-work" instructions issued to [REDACTED], for a shielded enclosure, have been amended for contract cancellation and settlement for work performed.

(b) Procurement memorandums have been submitted for the long-lead items that are required for installation of the data distribution network between the DAC terminals and the Signal Center.

p. Master Clock

25X1A5a1

[REDACTED], has discovered a high infant mortality rate with critical IC components, thereby necessitating a "second source" procurement. These failures and uncertain delivery of long-lead items will delay delivery of the clock divider/distributor until 1 June.

q. BEST/FS-96 TDM

The 520 Input Data Buffer Boards, P/N 398-11889-1, have been modified to correct for an incompatibility with the KW-7. Approximately 128 boards remain to be modified. As the applicable field stations have elected to return boards in quantities of ten to fourteen, it will take an additional five to six months to complete the Headquarters Modify and Return Program.

r. SB-1 Speed Buffer

The contract for ten SB-1s has been substantially delayed because erroneous drawings were supplied as GFE. The errors concerned the RF gasket attachment and have resulted in a \$2,391 change in scope. The new completion date is 7 June 1974.

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25X1A2g

s. [REDACTED]

Efforts continue to be directed toward the transfer of GCS control to SED. All equipment necessary for the final update of the [REDACTED] site has been shipped. Installation and testing by [REDACTED] engineers, accompanied by the OC-E/SED/FAB GCS engineer, is scheduled for mid-April 1974. 25X1A2d2

25X1A5a1

t. Selective Recall

The system has been renamed SATCAL. Controversy surrounding the characteristics of the prototype equipment has prompted a field test through SKYLINK. The test is tentatively scheduled to be initiated early next quarter so that a procurement package can be completed and an RFP for ten production Field Units can be released early in FY-75.

u. Integrated Operations Control Console (I.O.C.C.)

25X1A5a1

The three zones and the telemetering circuits have been wired into the Signal Center and the cutting over of active circuits will begin after the acceptance tests are successfully completed. [REDACTED] is presently troubleshooting the system for poor connections, broken wires, and other related problems.

v. High Speed Character Sequence Recognizer (HSCSR)

25X1A

OC-CS and [REDACTED] have formally been requested for their comments and suggestions on the specifications for a HSCSR. When received, these comments will be incorporated into the specifications as appropriate. A procurement package and a Request for Proposal will be forwarded to OL/PD early next quarter. The system has been designated the CSR-150.

w. Replacement for the R-390 Receiver

25X1A5a1

At least 90 of the remaining 104 651S-1 Receivers due in from [REDACTED] have been accepted. It is anticipated that this contract will be completed early in the next quarter.

x. Cooke 131 SELCAL Modification

A modification kit (5820-00P00-0077), to prevent false triggering of the Cooke 131 SELCAL System with AC power interruptions has been sent to the field for evaluation.

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y. AC Power Wiring Standardization for Field Stations

Approximately 25 detailed drawings have been sent to the printers for publication. The drawings show layout and standard practices to be followed in future power wiring installations of Generator Room, Grounding Systems (Isolated and Commercial), [REDACTED] and Shielded Enclosures. 25X1C

25X1A5a1

z. [REDACTED] Procurement

Delivery of the 205J-1As has started with the delivery of two LPAs this quarter. The remaining six LPAs are scheduled to be delivered by 31 July.

aa. PRS-2 and PRS-3A Procurement

(1) The prototype PRS-2 has been tested and delivered with the remaining 16 systems to be delivered according to the following schedule:

- a - 5 each on 8 April 1974
- b - 5 each on 22 April 1974
- c - 6 each on 13 May 1974

(2) The PRS-3A has encountered additional delays due to late delivery of materials from vendors. April 25 is now given as the prototype testing date with delivery of the four remaining systems by 23 May.

bb. SG-75A Noise Study

The modified SG-75A was field tested [REDACTED] and it was reported that the noise level was substantially reduced and comparable to other transmit systems. Based on this evaluation and the tests performed at [REDACTED] was requested to quote on quantities of necessary boards and modification kits. [REDACTED] recommended that PC-22 and PC-23-A17 be completely new boards and PC-21 be modified. The nomenclature of the modified exciter will now be SG-75B and the new PC boards will have a B added to their respective board numbers. 25X1A6a

25X1A5a1

25X1A5a1

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4. Drafting and Reproduction Unit

a. Engineering Publications - The following engineering publications have been completed and forwarded to the field:

- (1) MWO 169-2, SC-4 Secure Voice System
- (2) MWO 169-1, CU-34 Control Unit
- (3) MWO 185-1, BCS-17 (MIL-STD-188C)
- (4) ETB 64-5, Test Instrumentation Standards (5th Revision)
- (5) MWO 182-1, BCS-4 (MIL-STD-188C)
- (6) MWO 187-1, M-28 Printers
- (7) Parts Manual for Satellite Communications Terminal Type SC-1
- (8) MWO 175-2, FEC 1203 Demodulators

b. Drawings completed - Approximately 350 drawings (including charts, graphs, and viewgraphs) of various sizes were completed and reproduced copies were forwarded to the originators.

c. Reproduction -

- (1) Xerox machine reproduced over 72,000 copies.
- (2) Bruning 440 reproduced over 3000 sepias and opaque copies.
- (3) Xerox 1824 Printer has reproduced 300 drawings.

d. General -

25X1A9a

(1) [REDACTED] (OC-E/SED) and representatives of OC-E/CED have been meeting once a month to come up with a program for conversion to the metric system.

(2) Recommendations for the implementation of this program are expected in the next few months.

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