

NRL E-C0043-74

TOP SECRET - HANDLED VIA BORMAN
CONTROL SYSTEM

DATE
13 FEB 74

76/94

ORIGINATOR NSPO (PHE 106-541)			SERIAL NO. BYE 55,322-74	ENCLOSURES (1) AGENDA (2) LIST OF ATTEND- (3) MINIMUM DAILY VOLTAGE PLOT (4) PERCENT SUN PLOT (5) COLLECTION HIGHLIGHTS
DATE REC'D 2/22/74	TICKLER DATE -	COPY NO. 13	RECEIPT NO. NEX WA80,543	
SUBJECT POPEY TECHNICAL OPERATIONS GROUP (10G) MEETING: REPORT OF			DIST INFO	

<input type="checkbox"/> BASIC DOCUMENT ON R/S						
<input type="checkbox"/> BASIC DOCUMENT NOT HELD. DESTROY.						
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CODES HAVING PRIMARY INTEREST CHECK ONE	
<input type="checkbox"/>	RETAIN INDEFINITELY. (REFERENCE VALUE).
<input type="checkbox"/>	RETAIN _____ MONTHS. (INFO MATERIAL HAVING ONLY TEMPORARY REFERENCE VALUE).
<input type="checkbox"/>	DESTROY AFTER ROUTING. (NO FURTHER REFERENCE OR INFORMATION VALUE).
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NRL INCOMING DOCUMENT



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ACTION
I-INFORMATION
C-COMMENT
R-RETAIN
E-EVALUATION

RETURN THIS ROUTE SLIP TO NRL SPECIAL PROJECTS OFFICE, ROOM 222, BLDG. 43.
DO NOT ROUTE TO OTHER SECTION OR BRANCH.

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NRL (7030)	<i>[Signature]</i>						
	<i>[Signature]</i>	3/77					

(OVER)

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BYEMAN-TALENT-KEYHOLE

Access to this document will be restricted to those persons
cleared for the specific projects;

EARPOP

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B-43-74

GROUP 1
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NAVY SPACE PROJECT OFFICE

(S) NATIONAL RECONNAISSANCE OFFICE, PROGRAM ~~BYEMAN-TALENT-KEYHOLE~~
WASHINGTON, D.C. CONTROL SYSTEMS JOINTLY

OFFICE OF THE DIRECTOR

PME-106-541/lc

13 FEB 1974

MEMORANDUM FOR THE DIRECTOR, NATIONAL SECURITY AGENCY (W24, W34, R24 & A81)
CHIEF OF NAVAL OPERATIONS (OP-094W)
DIRECTOR, CENTRAL INTELLIGENCE AGENCY (OSI)
DIRECTOR, NRO STAFF (SS4, SS4A & SS7)
COMMANDER, NAVAL SECURITY GROUP COMMAND
DIRECTOR, NAVAL RESEARCH LABORATORY (1000 & 7030)

Subj: POPPY Technical Operations Group (TOG) Meeting; report of

Encl: (1) Agenda
(2) List of Attendees
(3) Minimum Daily Voltage Plot
(4) Percent Sun Plot
(5) Collection Highlights

1. A POPPY TOG meeting was held at the Naval Security Station at 0930 on 31 January 1974. The agenda and a list of attendees are forwarded as enclosures (1) and (2).

2. The following specific items were discussed:

a. Status. (NRL)

The 7107 set of POPPY satellites have passed out of the 100% sun exposure period. Today's exposure is 76%. The high sun time was beneficial to the batteries, keeping all satellite voltages well above minimum acceptable values (see enclosure (3)).

7107D has experienced two serious problems since the last TOG meeting.

(1) At the last meeting, it was discussed that SLM (Signal Level Measurement) capability was lost. This situation soon rectified itself. No resolution of the cause was available, and 7107D operated normally until the event described in the following paragraph occurred.

(2) On 8 January [] experienced a command problem with 7107D that has since been fully diagnosed as a failure in the third position of the four position binary command system. Only commands that contain a zero in this position will be accepted. This loss negates the use of the 20 minute timer and all SLM. The 50 minute timer is always actuated now and the sites must reset (turn off) the satellites as they pass from view to conserve power (normal pass length is less than twenty minutes). NRL has attempted to rectify this problem through selective commanding from [] with no success. A root cause of this problem might be high temperatures (50°C) experienced during 100% sun exposure. There is hope that cooler operating temperatures will alleviate the problem. Enclosure (4) is a plot of sun exposure that shows

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Methods Involved

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that lower sun will persist through the end of February. If the problem is an overheated capacitor in the command circuitry, it could be permanently damaged or could resume normal operation with less heat.

b. Collection Highlights. (NSG)

Enclosure (5) was presented by

Mr. Gallagher of NSA stated that was involved in the following incident:

(1) On 26 January 1974, at 0408Z, SIGINT Satellite Mission 7107D intercepted a radar signal. is a 8200 MHz, 163 pps, 8.2 Hz lobe switching radar carried aboard SL-11 (Soviet Heavy Maneuverable) satellites. The primary function of this radar is ocean surveillance.

(2) During intercept, was positioned 30° below Mission 7107 at a slant range of 678 nmi.

(3) Analysis is not yet complete; but speculation is that this emission is the result of side-lobe energy.

c. Processing Highlights. (NSA)

Mr. Gallagher of NSA provided the following:

(1) unidentified signal #166 has been designated as a previously unknown rf mode of by the following process:

(a) Mission 7107 has been intercepting a previously unknown signal emanating from the Peoples Republic of China. With the exception of radio frequency, the parameters are identical to

(b) (Ref: NSA Dtg: 221246Z Jan. 74) Overhead photography of 1 December 1972 has correlated the PRC radar model number 408 to A-Band signal . The RMN 408 functions as an early warning radar in the air surveillance system. Currently only two radar facilities reflect the . These facilities are at Radar Stations.

(c) Mission 7107, through has been consistently geopositioning signals from both locations of the radar. Analysis from other collectors is underway, and will establish the RF operating limits.

Feedback provided in W3-011Z-74.

(2) has been collecting SLM on an advanced radar at Kharkov, and has observed what was thought to be a new pulsing mode and

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a stacked (four) beam structure. On 15 January another site intercepted the [] and the same signal that [] has been, simultaneously, indicating that either a new radar is on line or that the radar has modes other than the [] signal.

d. PAPS Deployment. (NSA)

[] of NSA presented a status report on the PAPS III deployment that commenced on 21 January. Several hardware problems have been encountered at [] that will probably delay completion of the acceptance. While the hardware is under repair (or awaiting parts, in most cases), the contractor personnel are using their time to conduct preliminary training in PAPS III for site personnel.

[] also summarized features of PAPS III which had been discussed at the previous TOG.

The NSG representatives pointed out that the PAPS III deployment has been inadequately supported. No spares for the new equipment are available (unique equipment not in Navy supply channels); and no maintenance and repair documentation was purchased with the deployed equipment. A purchase order for the necessary material has been issued, with a promised delivery date in March.

e. Transition. (SPO)

The SPO recently released a POPPY [] several details of which have been discussed at previous TOG meetings. One evolution of this transition is occurring at [] now. The Transition Plan forecasts a ten day period (4-15 February) during which operations must cease while the MILCON contractor erects a security barrier within the building, behind which continued POPPY operations can be conducted. Also, during the inoperative period, NRL and [] personnel were scheduled to relocate all POPPY collection and processing equipment into one room.

By close coordination and cooperation between NRL and [] the required consolidation of POPPY equipments has been accomplished (as of 25 January); and it is now anticipated that any down time in February will be minimal. This operation is a credit to what can be accomplished in the field by dedicated personnel.

f. Engineering Support. (SPO)

Two regularly scheduled engineering support activities are a part of the POPPY Program:

(1) On-orbit calibrations, performed quarterly, involve the 7107 satellites as they pass over the middle United States, a calibrated transmitter near Lockheed, Sunnyvale, and a ground receiver system. The recorded tapes are processed/analyzed by NSA.

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(2) Engineering evaluations, performed semi-annually at sites on a rotational basis, wherein a technical team checks the site-satellite interfaces and evaluates satellite command response (options, etc.).

Both evolutions have been supported by the NRL in the past, by making [] available for receiving and recording the calibration data, and by providing qualified personnel to conduct the necessary operations and analyses. Because of budget restrictions on the POPPY program, some reduction in this support is necessary. An on-orbit calibration scheduled for early March, 1974 cannot be supported by the NRL. [] may be able to support this effort and future calibrations. ?

g. U.S. Ships Location Study. (NRL)

Mr. Lawton presented an up-date to what was presented at previous TOG meetings. Although the last data collection in this effort was accomplished on 15 November 1973, it was just recently received at the NRL, delaying the formal report.



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3. The next TOG meeting is scheduled for 28 February at NSA.

R. K. Geiger
R. K. GEIGER

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STATUS

COLLECTION HIGHLIGHTS

PROCESSING HIGHLIGHTS

PAPS DEPLOYMENT

TRANSITION

ENGINEERING SUPPORT

U.S. SHIPS LOCATION STUDY

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ENCLOSURE (1) to BYE 55,322-74

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~~TOP SECRET LARPOP ZARF~~HANDLE VIA
BYEMAN-741 ETE KENNEDY
CONTROLList of Attendees

SPO:

PME-106:

NSA:

OPNAV:

NRL:

Mr. Lawton ✓

Mr. Frankovic ✓

NSG:

LT Morgan

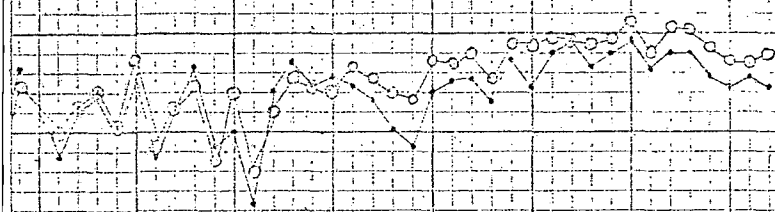
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ENCLOSURE (2) TO BYE 55,322-74

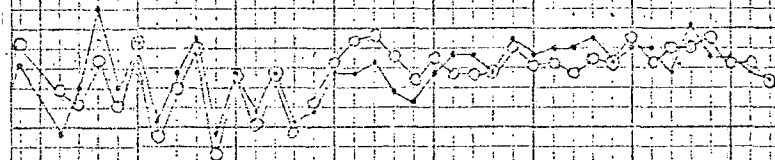
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MINIMUM DAILY VOLTAGE PLOT

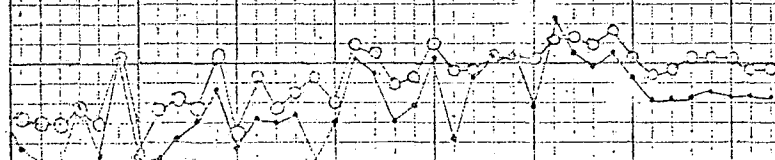
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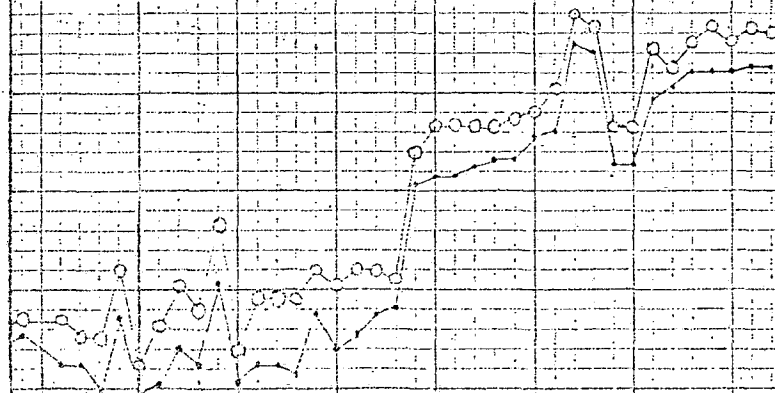
7107A



7107B



7107C



7107D

12.5 VOLTS

HANSEN WTS
PAGE 14

CONTROL SYSTEM ON

ENCLOSURE (3) TO

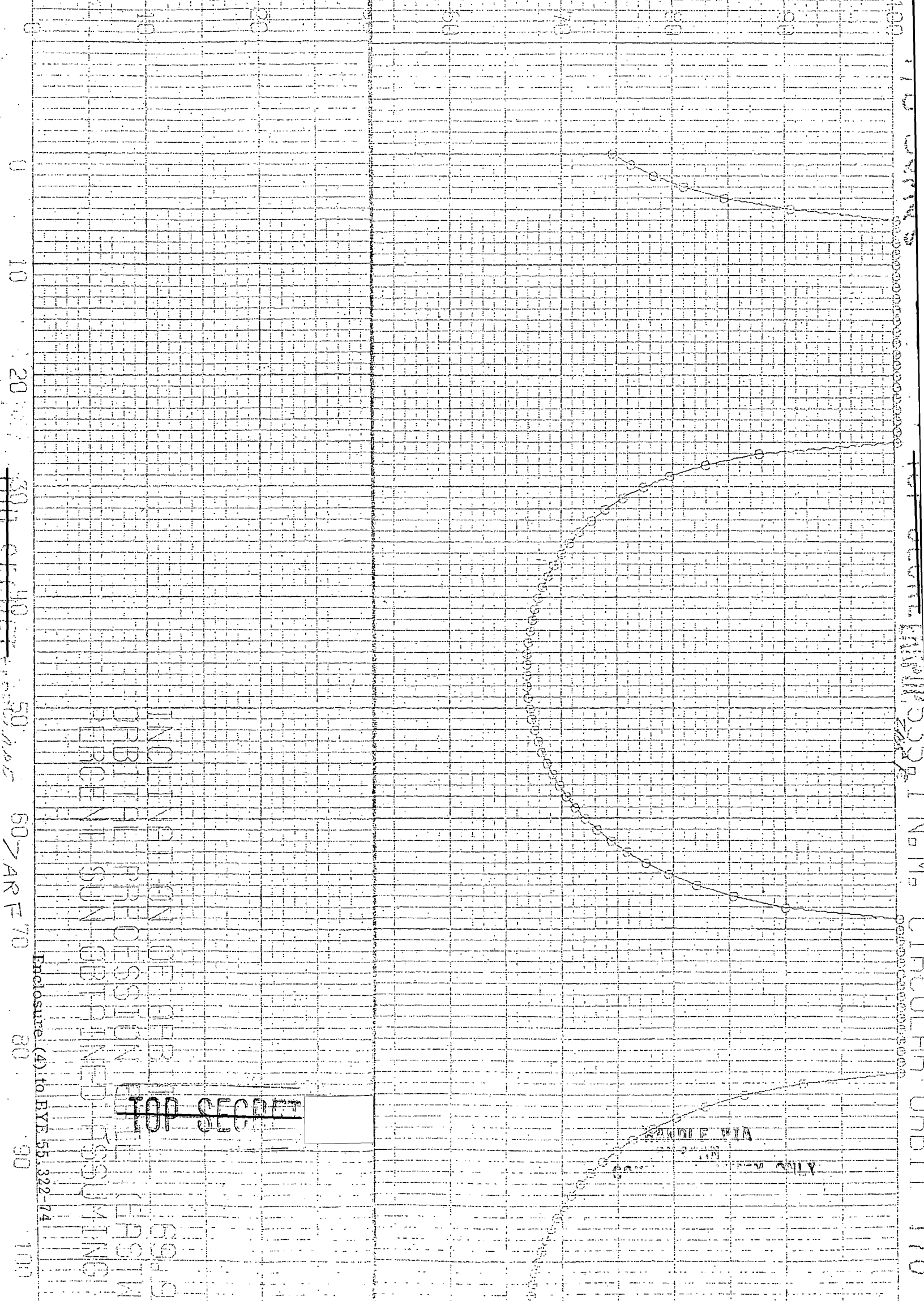
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COLLECTION HIGHLIGHTS

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Since the last TOG on 20 December 1973 there have been a number of changes in the System Status. On 19 December 1973 DELTA payload SLM option failed as discussed in the last TOG meeting. However, over the Christmas holiday weekend the option corrected itself and began to function normally. On 7 January 1974 tasking was discontinued on CHARLIE-DELTA payload [] because of malfunction in DELTA. Later, at the request of [] CHARLIE payload was again tasked to keep a drain on the payload batteries. On 18 January 1974 DELTA payload was once again tasked in accordance with physical constraints established by NRL. On 22 January 1974, at the request of NSA, CHARLIE payload SLM collection was activated and DELTA was tasked with the same task group minus imposed constraints. DELTA payload is still experiencing the same limitations.

Frequency coverage at [] was increased on 1 January 1974 to include many of the same bands as [] [] can now command interrogate for all three sites when common tasking is possible. On passes where only [] and [] are involved, [] will command/interrogate in the beginning of the pass and [] will reset on the end of the pass for those passes where tasking is compatible.

Ocean Surveillance - Since the last TOG there have been 3610 [] locations. Of these 460 have been equated to specific ships, 2240 were merchant associated and 62 were submarine intercepts. The following items of interest were noted from []

(1) The KANIN DDG 252 BOYKIY conducted a covert transit from the Baltic to North Fleet waters using only its [] radar. It began the transit on 16 December 1973 but was not confirmed until 19 December 1973 by an actual sighting in the North Sea.

(2) [] observed the movements of the KARA CLGM 539 NIKOLAEV as the vessel entered the Med from the Black Sea.

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(3) Both [] monitored the transit of the CHILIKIN DNESTRA from the Baltic to North Fleet waters.

(4) [] monitored the movements of the SSOCS KOROLEV along the East coast and is now in Havana.

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(5) [] observed the KRESTA 547 ADM MAKAROV as it exited the Barents in the North Sea and performed rescue operations of an ATA (Ocean tug) and returned to the Barents.

(6) Also monitored by both sites [] was the transit of the KARA CLGM 539 NIKOLAEV and KASHIN DLG 514 OBRAZTOSVY into the Atlantic off the coast of Portugal into an area around the USS AMERICA and back into the Med.

(7) [] is monitoring the movements of several AGM's now performing exercises in the Pacific below the Aleutian Islands.

(8) [] are observing the movements of the KRESTA II CLGM 597 MARSHALL VORSHLOV in its first out-of-area transit into the Atlantic Ocean.

PROJECT FLAVOR - Since the last TOG there have been a total of 128 intercepts. 100 of these geolocated to [] Of these 100

[]
Also intercepted for the first time was a [] from [] Although it is an established site this is the first POPPY intercept of this site.

PROJECT WINEGLASS - Three [] radars were intercepted from []

TI - [] intercepted a [] in a new low mode at 997.0pps. [] also intercepted a [] with a PRF 2411.3 pps which is double the peak value normally used and may represent a new PRF mode of operation.

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ENCLOSURE (5) TO BYE 55,322-74

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