TOP SECRET [redacted]

[redacted] Op-922Y 13 November 1961

Code 5430, U. S. Naval Research Laboratory

1. The Navy would like to look into the problems associated with the Data Reduction and fixing of GRAB II. The purpose of this study would be to make a comparison of the machine and manual processing techniques to attempt to detect what the limitations of each are and how they can perhaps be overcome. The lower densitity of GRAB II provides a good basis for this study.

2. Also it is desired to study the quick look techniques such as NRL's 8000 to 1 compressed spectrograph records. This should permit rapid looks at the various radars based on the mechanical-visual antenna rotation rate sorting.

3. To assist the position fixing problem NRL has several slightly different ideas for program of circle fitting they would like to try in attempting to solve this problem.

4. NRL desires the services of [redacted] to assist in processing some data on the Gerber and the NARC computer at NRL.

5. [redacted] of ONI-STIC is already working with NRL to make the 8000 to 1 compression on the Rayspan equipment.

6. [redacted] of STIC would like to secure the services of Ethel Smith who is transferring to STIC prior to the 1 December date to help him in detailed manual look at the signal data especially looking for new signal types.

7. Bruce Wald will work with [redacted] and NSA to check the processing results with those of Audico to attempt to establish where the automatic processing problems seem to be limited. Also he will be working with NSA to attempt to find where the position fixing program seems to "bog down". He will use the NAREC computer to assist him in these fixing program studies.

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BYE-057366-99

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8. It is obvious that a good coordinator-liaison man between NRL - C-15 -(COSA-5) and the people at Fort Meade would help draw the loose ends on the processing problems together. We would like to see [redacted] soon to report to duty at NSA-COSA-5 to be assigned to this job. He has excellent background for this task and is well known to all parties. We urgently recommend he be assigned to this task upon reporting for duty at NSA. This effort will take at least a month to get at the heart of the problem. Since several holidays occur during the next month this may lengthen the period slightly.

/s/ H. O. LORENZEN

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9 November 1961

1. The following documents have been received by this office:

a. One reproduced copy of SAC PROCESSING REPORT OF GRAB I DATA WITH SIX ATTACHMENTS.

2. Above material forwarded under PWP #230-61.

BYE-057365-99

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[redacted]

[redacted]

[redacted]

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CONTROL

~~SECRET~~ U.S. NAVAL SECURITY GROUP ACTIVITY
NAVY NO. 913
FLEET POST OFFICE
NEW YORK, NEW YORK

In Reply Refer to: 034/CLB:wjs
5213/8
Ser 0076 OP
07 NOV 1961

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From: Commanding Officer, U.S. Naval Security Group Activity,

To: Director, Naval Security Group

Subj: Scope photographs; forwarding of PROJECT GRAB

Ref: (a) DIRNAVSECGRU msg 182246Z October 1961

Encl: (1) Photographs of detected RF output

1. Reference (a) requested photographs of the scope presentation of detected RF output of each main unit triggered both into the dummy load and into the antenna during actual operations. This information, reflected on enclosure (1), was obtained using a type 302 Polaroid Oscillograph Record Camera and a Textronix 535 Oscilloscope.

2. Maintenance difficulties were encountered following receipt of reference (a) which delayed preparation of enclosure (1) for several days. The first such difficulty was failure of relay K201 in main unit #1. A replacement part has now been received and installed. After installation of the relay, a divergence of antenna current readings between main units #1 and #2 was observed. This difficulty has also been traced down and eliminated.

3. Thorough stage by stage maintenance checks indicate that both main units are presently in optimum operating condition.

F. W. HITZ JR

Pertains to command transmitter interrogation hut

BYE-057364-99

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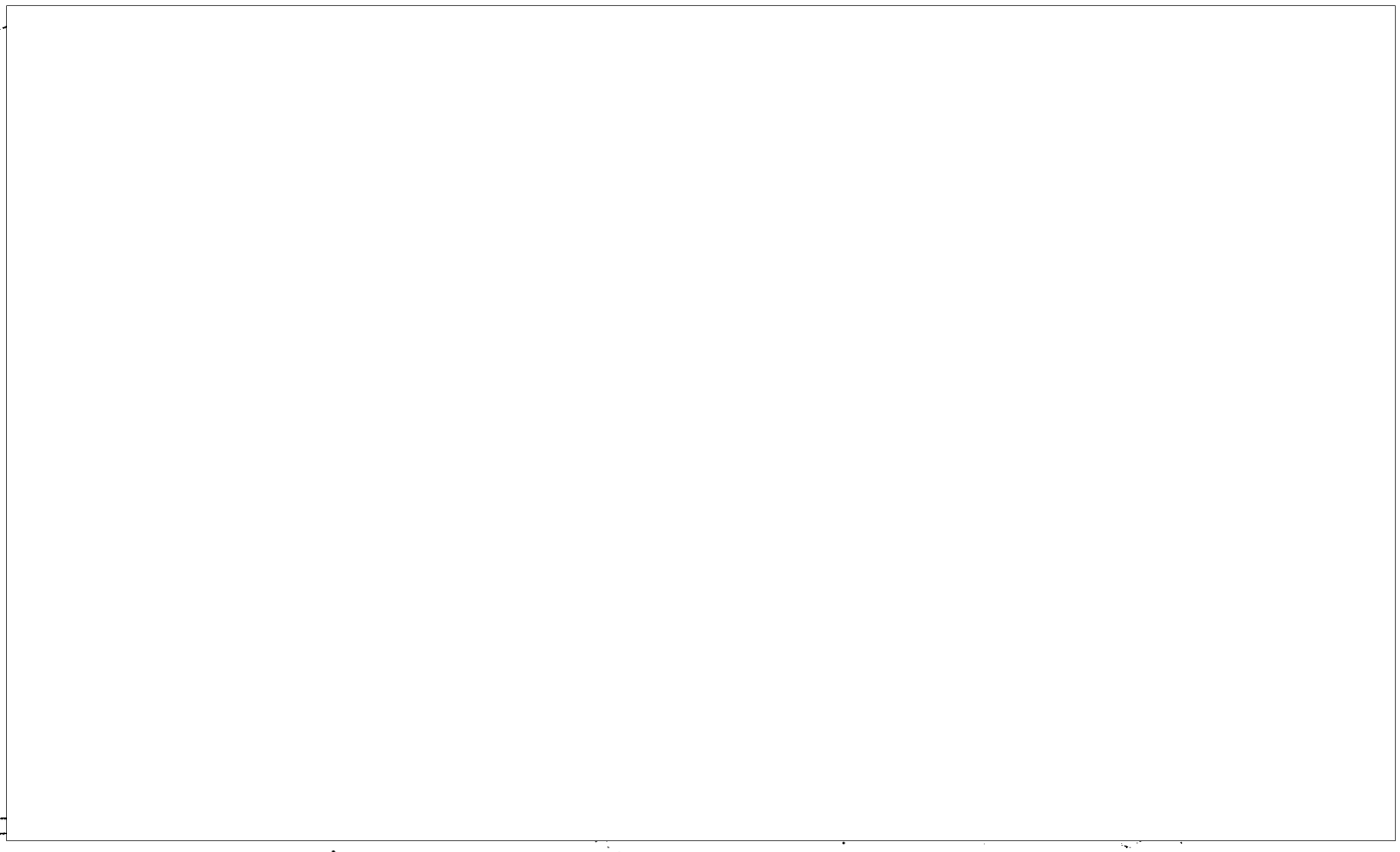
#1 #2



#1. Photograph, No. 1 Main Unit, detected output, reading up in direction of arrow - Alfa Modulation, Echo Modulation, Foxtrot Modulation, all taken into dummy load.

#2. Photograph, No. 2 Main Unit, detected output, reading up in direction of arrow Alfa, Echo, Foxtrot modulation in that order, all taken into dummy load.

#1 and #2 photographs were taken with settings on the oscilloscope of .2 Volts per centimeter and .2 seconds per centimeter sweep time.

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ENCLOSURE (1)

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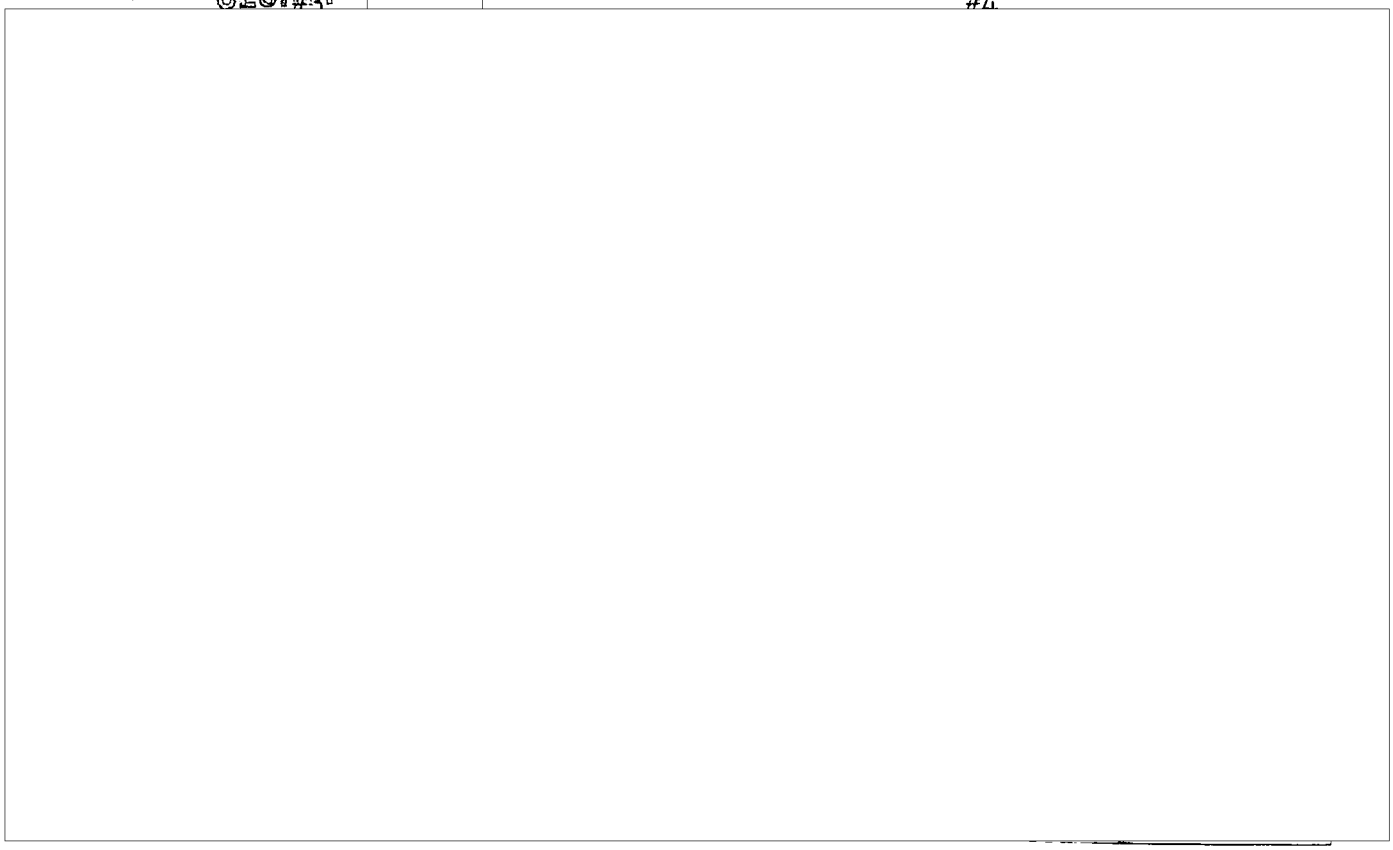
#4



#3. Photograph, No. 1 main unit, detected output, reading up in direction of arrow, Foxtrot, Alfa, Echo modulation in that order, all taken in actual operations using regular antenna.

#4. Photograph, No. 2 main unit, dectected output, reading up in direction of arrow, Foxtrot, Alfa, Echo modulation in that order, all taken in actual operation using regular antenna.

#3 and #4 photographs were taken with settings on the oscilloscope of .2 Volts per centimeter and .2 seconds per centimeter sweep time.

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ENCLOSURE (1)

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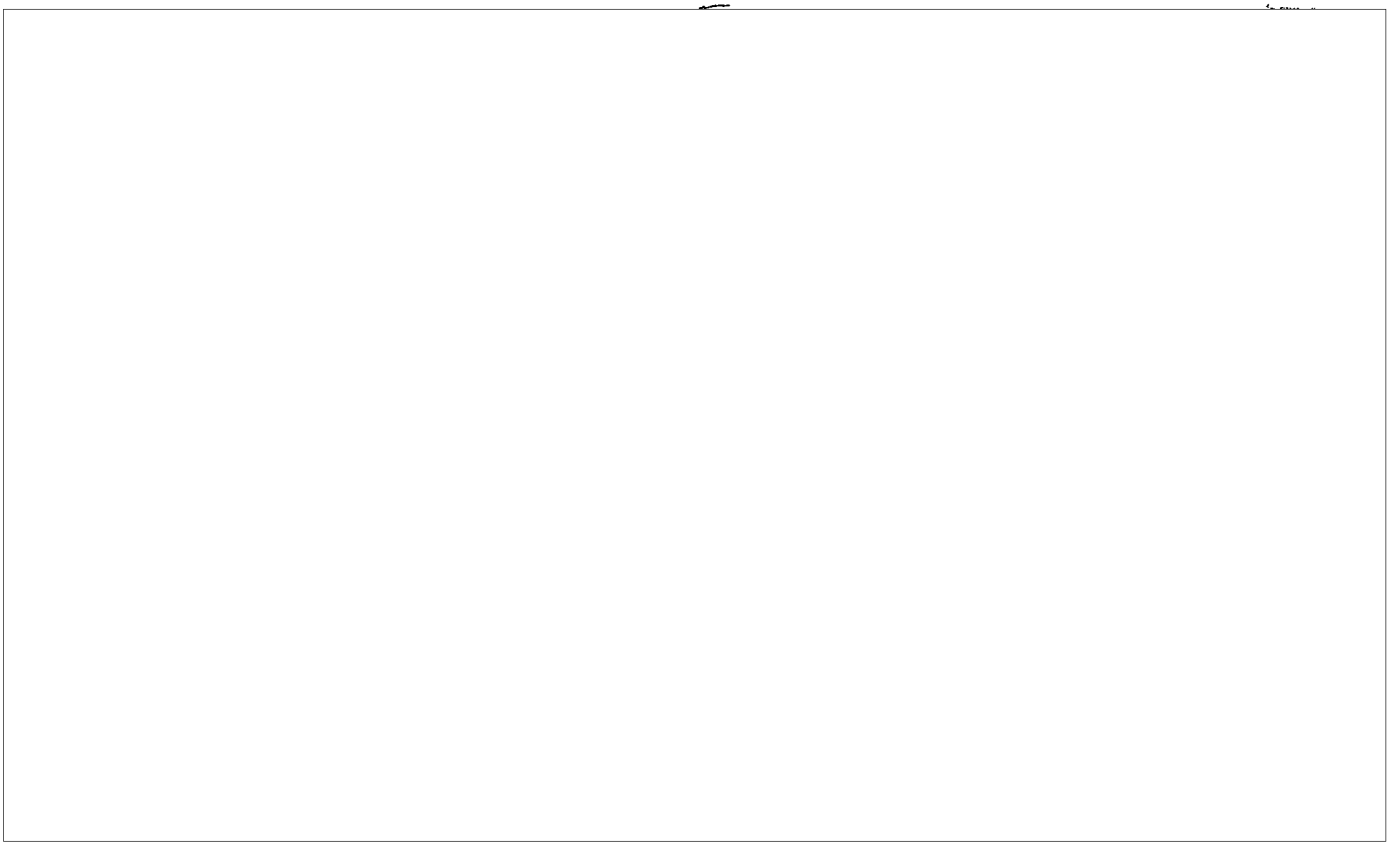
#5

#6



#5. Photograph, No. 1 Main Unit, detected output, reading up in direction of arrow, Alfa, Echo, Foxtrot modulation, in that order, all taken into dummy load.

#6. Photograph, No. 2 Main unit, detected output, reading up in direction of arrow, Alfa, Echo, Foxtrot modulation, in that order, all taken into dummy load.

#5 and #6 photographs were taken with settings on the oscilloscope of .5 Volts per centimeter and .5 seconds per centimeter sweep time.

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ENCLOSURE (1)

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(U) SECRET #7

#8

#7 Photograph, No. 1 Main unit, detected output, Echo modulation taken into dummy load.

#8 Photograph, No. 2 Main unit, detected output, Echo modulation taken into dummy load.

Photographs #7 and #8 were taken with oscilloscope settings of .2 Volts per centimeter and .2 seconds per centimeter sweep time. They are photographs of Echo modulation on main unit one and main unit two.

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ENCLOSURE (1)

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