MEMORANDUM ~~SECRET~~ [redacted] 24February 1969

Branch Review.

What is SISS ZULU

BACKGROUND....10 Years of History with significant aspects relative to today's roll of NRL in the Naval Space picture

Only IN-HOUSE capability within the total Dept of Defense.

First of the contempory systems

Common Denominator through Evolution allows prediction of Future.

Complimentary and compatible with the [redacted]

If Analysis community would get new programming for computer it could seriously challenge the [redacted] NSA in one of the POPPY working areas has already recommended that they purchase a computer like our small one in [redacted] so their analysis could be "SELECTIVE" too.

MANY CHANGES HAVE BEEN MADE BUT MANY SIMILARITIES REMAIN SINCE THE FIRST. What started out to be Mayo & Rose has grown somewhat as this chart will show. Now there are four UNITS in this Section..... I shall discuss them in serial fashion.

FLIGHT SYSTEMS: Under the supervision of Vincent ROSE, with [redacted] [redacted] have continued during the past year to execute into hardware the detailed design concept for Mission 7106. As you are all aware there are four payloads with a total of [redacted] collection experiments, [redacted] in each of the 4 birds. SLIDE The most striking example of improvement in the technology of this effort is that of the use of minature Transistor type RF-Preamps today instead of the larger and more tedious Tunnel Diode RF Preamps of two years ago. SLIDE #____

The [redacted] hardware has been increased in sensitivity and raised into the next higher freq. step. [redacted] The most significant limitation in this group is that of ever increasing demands for more and more antenna elements on the surface of the payload. This imposes extremely severe penalties in both the receiving antenna systems and in the solar-re-charging system as well. Addition of an Engineer (Cleared able) with significant antenna design experience would enhance the really unbelievable productivity of this group. With out a doubt, this portion of the entire POPPY Team is the most necessary and is the thinnest in Technical personnel support. adding an antenna man to this group would of course require an anechoic RF-Darkroom for his work space. This could be designed into the space between the present penthouse and the edge of the Building, between the Airconditioner systems situated there.

~~SECRET~~ [redacted]

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Another critical area of this Unit is that of the Acceptance of commercial components. [redacted]s being handled by [redacted] who was hired from within the Laboratory over a year ago to replace [redacted] who is going to University of MD taking a degree in Computer Science.

COMMAND SYSTEMS Group under Mr WE WITHROW with Art Tool assisting ....

This Team has had an extremely demanding year with the addition of both a new-command frequency in 7106 and the demand for a more versatile Interrogation antenna at the [redacted] overseas sites. The old antenna shown in SLIDE #_____, had no ability to move in elevation and thus eliminated the possibility to interrogate payloads at elevations above about 45°. As the payload population increases and the command system becomes more flexible it has become necessary to interrogate both incoming orbits as they approached the site, during the overhead flight and on the outgoing portion of the orbit as the payload departed from the collection coverage area. The change in interrogation frequency has made it opportune to sighten up on the Standard Operations Proceedures which have evolved over the past 6 years of use of the old frequency. Its rather wide exposure makes it rather certain that it is no longer secure....The new antennas do make a much more confined antenna beam by reducing the back lobes of the pattern by the solid disc back-planes. This antenna has greatly improved directivity capability as being capable of handling both the Old and the New command Frequencies....

Both Tool and Withrow are soon elgible for retirement and this team should be enhanced by the addition of an junior engineer or Technician who can share the demanding site calibration and up-dating responsibilities.

SECRET [redacted]

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OVERSEAS-SITE SYSTEMS UNIT Fred V. HELLRICH....

This unit has three men: In-addition to the Unit head there is Terry Fisher and ...

During the past Year extensive effort has been expended to make all the sites uniform and alike both in equipment, documentation operations proceedures and training. sites remain at this time with closing before 1 November 1969.

The purchase and acceptance test of the Computer portion of the Field digitizer system for the have occupied a major portion of the effort of this group and will be completed in the next several weeks. 30,000 pounds of equipment are now enroute including the complete digital system and computer. The most modern systems are included, as well as the Future software for Mission 7106 so that the community may have advanced experience with the digital data before the flight of 7106.

Another great area of effort has been expended in the guidance of the Traning, Documentation and production of Computer Software at the HRB-Singer Plant at State College, Penna. Prodúrement and shipment of complete spare parts for the digital system was also carried out by this Unit...a monumental job with an infinite variety of obscure problem areas. Particularily since the computer for this installation is a modernized version of the two earlier computers but uses entirely different spare parts.

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(ELINT)

PROGRAM "C" TECHNICAL STAFF ORGANIZATIONAL CHART

R. Mayo — Section Supervisor

[redacted] — Administrative Ass't

FLIGHT SYSTEMS	COMMAND SYSTEMS	COLLECTION SITE SYSTEMS	R & D
V. S. Rose	W. Withrow	F. Hellrich	G. Price
E. G. Becke	A. Tool	T. Fisher	[redacted]
[redacted]		[redacted]	

V A C A N C I E S

Antenna Engineer
Electronic Technician

Digital Systems Engineer
Analog Systems Engineer
Programmer (AMS)
Programmer (AMS)
Maintenance Technician

Development Engineer
Draftsman

H R B - S I N G E R , I N C.

NRL LOCATION

R & D	LOGISTIC SUPPORT
L. Hammarstrom	[redacted]
M. Van de Walle	Expediter
J. O'Connor	
P. Oesterling	
T. Lawton	

OVERSEAS LOCATION

R. Wales
E. Lybarger [redacted]
Vacancy [redacted]

STATE COLLEGE LOCATION

E. DeMARK-PROGRAM-913 MANAGER

SOFTWARE DEVELOPMENT	HARDWARE PRODUCTION
R. Daniels	J. Woika
W. Bickham	W. Lehr
J. Martin	J. Burkey
J. Shepherd	H. Butler
J. Dixon	M. McCoy
M. Keebaugh	E. Heiser
J. Riale	H. Crecraft
J. Streibel	H. Holder
M. Smith	R. Wolfe
T. Burtnett	

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[redacted]

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 DRAFT - 2/7/69

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BRANCH REVIEW
27 February 1969
Space Technology, Electronic Warfare

Siss Zulu (limited attendance)
Mayo — 0900-0945

Coffee Break

NRL-SG and the M/U — 1000-1010

The Sugar Grove Program - A Balanced Investment — 1015-1040

Cost Studies and Current Contracts on the 300-ft. Antenna — 1045-1115

Tracking the Enterprise and Intercept Highlights for 1968 — 1115-1135

Microwave (Near Space) Intercept — 1140-1200

Suggested Laboratory Reviewer -
Suggested Laboratory Visitor -
Suggested Outside Visitor -

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