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SECRET 011430Z
WORTH/INFO WHIG/CITE MARGO 151-6
EARPOP
REF: WORTH 9960
SUBJ: LEIGE/FLICAT TESTING

- 1. MARGO PRIMARILY INTERESTED IN FLICAT PAYLOAD BENCH TESTS.
- 2. MARGO PARTICIPANT, [REDACTED] WILL REMAIN FOR PERIOD OF FLICAT TESTING. MAJ WILLIAMS AVAILABLE FOR GUIDANCE

SECRET
CFN: MARGO 151-6
EARPOP
REF: WORTH 9960

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- 2. MARGO PARTICIPANT, [REDACTED] WILL REMAIN FOR PERIOD OF FLICAT TESTING. MAJ WILLIAMS AVAILABLE FOR GUIDANCE

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SECRET 231600Z
PRIORITY WHIG Wahoo WORTH INFO WEDGE CITE MARGO 287-6

EARPOP
REF: MADAM 1259 (NOTAL)
UNDERSTAND FROM REF THAT MISSION 7311 WILL NOT BE THOROUGHLY BENCH
TESTED BUT WILL ONLY BE CALIBRATED AT VAFB AFTER MATING WITH BOOSTER.
IF THIS UNDERSTANDING IS CORRECT, STRONGLY RECOMMEND POSTPONEMENT
OF THIS MISSION FOR PROPER TESTING IN ORDER TO ENSURE RELIABILITY.
FACT THAT QUOTE MAJOR DESIGN PROBLEM UNQUOTE HAS BEEN DETECTED
STRENGTHENS THIS RECOMMENDATION.

Private

*NOT TRUE
have copy
to look
NSA has
wrong story
P/L in bench
Test now -
WORTH to go advise
NSA*

*NO - REWARD RESOURCE
OK 25 FEB*

SECRET
OPN: 287-6
EARPOP
REF: MADAM 1259 (NOTAL)

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SIX THREE SEVEN WORTH ONE EIGHT FOUR WEDGE FOUR TWO TWO MADAM

SECRET 022025Z

WHIG WAHOO WORTH/INFO WEDGE MADAM/CITE MARGO 350-6
EARPOP /

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Page 1 of 1 Pages
Control No. _____

- REF: A. MARGO 287-6 (NOTAL).
- B. 23-25 FEB TD MEETING.
- C. PHONECON KRANSKI TO POTTS 23 FEB.
- D. MADAM (ESAO) DTG 211630Z FEB 66.

1. UNDERSTAND FROM REF B THAT MISSION 7311 WILL BE LAUNCHED 0/A 25 APRIL, AND THAT CALIBRATION WILL BE DONE AT VAFB. IN ACCORDANCE WITH REF C PER WORTH'S REQUEST, NO MARGO REPRESENTATIVE WILL PARTICIPATE IN THIS CALIBRATION.
2. IT IS ESSENTIAL THAT THE CALIBRATION RESULTS BE FORWARDED TO MARGO 30 DAYS PRIOR TO LAUNCH. APPRECIATE AND ACCEPT YOUR OFFER TO SEND REPRESENTATIVE FROM MADAM TO MARGO WITH TEST TAPES AND CALIBRATIONS WHEN THESE ARE AVAILABLE.
3. SPECIFIC TESTS REQUIRED BY MARGO ARE THOSE OUTLINED IN REF D, AS WELL AS TESTS OF THE TYPE RECORDED WHILE MARGO REPRESENTATIVE WAS AT MADAM 9 FEB - 15 FEB 1966. MAJOR KRANSKI AND MADAM ARE AWARE OF THE REQUIREMENTS WHICH, IN GENERAL, CONSIST OF AN OVERALL SYSTEM CALIBRATION SUFFICIENT TO PERMIT THE DETERMINATION OF FREQUENCY, POWER, INTRAPULSE STRUCTURE, AND OTHER CHARACTERISTICS OF THE TARGET SIGNAL. THE CALIBRATION MUST INCLUDE SUFFICIENT VARIETY OF INPUT SIGNALS TO ENABLE THE PROCESSOR TO DETERMINE THE DEGREE TO WHICH SIGNAL CHARACTERISTICS CAN BE IDENTIFIED. IN ADDITION, ENVIRONMENTAL PROBLEMS, (EXAMPLE, THE _____ ENCOUNTERED ON MAGNUM) SHOULD ALSO BE SIMULATED. FLUCTUATIONS IN CALIBRATION TEST DATA WITH RESPECT TO TEMPERATURE VARIATIONS SHOULD BE FORWARDED WITH CALIBRATION RESULTS. ALSO AN ACCURATE ANTENNA CALIBRATION MUST BE MADE AND RECORDED.
4. MARGO IS CURRENTLY AWARE OF SOME MAJOR PROBLEM AREAS REGARDING CALIBRATION THAT BECAME EVIDENT AS A RESULT OF BENCH TESTS (9 - 15 FEB): FOR EXAMPLE: MARGO CONSIDERS THE FACT THAT THE DISCRIMINATOR OUTPUT LEVEL VARIED WITH RESPECT TO INPUT POWER LEVEL AS WELL AS FREQUENCY IS AN UNDESIRABLE FEATURE MAKING EXTENSIVE CALIBRATION NECESSARY AND COMPLICATING PROCESSING. PRELIMINARY ANALYSIS OF TAPES RESULTING FROM PREVIOUS BENCH TESTS HAVE SHOWN FURTHER DISCRIMINATOR PROBLEMS. WHEN AN INPUT PULSE, (AT AN RF THAT WOULD EQUATE TO BEING PREDOMINATELY IN THE LINK 3 OUTPUT), IS RECEIVED, THE DISCRIMINATOR ROSE TO A LEVEL (FOR THE DURATION OF THE PULSE) THAT WAS NOT INDICATIVE OF INPUT FREQUENCY. AT THE TRAILING EDGE OF THE PULSE THE DISCRIMINATOR OUTPUT FELL TO A LEVEL THAT WAS PROPORTIONAL TO THE INPUT FREQUENCY. THE BOX CAR CIRCUIT DOES NOT HOLD THIS LEVEL AS IT

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SHOULD, BUT BEGINS IMMEDIATELY TO FALL OFF EXPONENTIALLY UNTIL A NEW PULSE IS RECEIVED. WHEN THE ONLY INPUT SIGNAL IS THE 158 MCS CALIBRATION PULSE OCCURRING ONCE EVERY 2 SECONDS, THE BOX CAR OUTPUT WAS OBSERVED FALLING OFF FOR THE WHOLE 2 SECOND DURATION WITH NO ONE SECOND BOX CAR EFFECT NOTED. THE PULSE OUTPUT FROM THE DISCRIMINATOR WAS NOTED IN MADAM'S DESIGNATED TEST NUMBER 7, AT INPUT FREQUENCIES OF 153, 156, 157, 159, 160 AND 162 MCS. MARGO CONSIDERS THAT THIS APPEARANCE OF A PULSE IN THE DISCRIMINATOR OUTPUT, ALONG WITH THE LACK OF A PROPER BOX CAR EFFECT ARE INDICATIONS THAT THE DISCRIMINATOR AND BOX CAR CIRCUITRY WERE NOT FUNCTIONING PROPERLY AND SHOULD BE RECHECKED.

S E C R E T

OPN: REQUEST RERUN IF NEEDED.

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FOUR FIVE TWO GUARD
GUARD PASS MARGO

76-1311

SECRET 032310Z
PRIORITY WHIG WAHOO MARGO INFO MADAM CITE WORTH 0317
EARPOP
WHIG FOR [] WAHOO FOR [] ; MARGO FOR R. POTTS;
MADAM FOR W. HARRIS.
SUBJ: MISSION (7310/7311)
REF: MARGO 287-6

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1. EXTENSIVE CALIBRATION AND TESTING OF THE SUBJECT MISSIONS WILL TAKE PLACE AT VAFB. THE QUANTITY AND QUALITY OF THE CALIBRATION AND TESTING SCHEDULED FOR VAFB WILL EQUAL OR EXCEED THAT ORIGINALLY SCHEDULED TO BE ACCOMPLISHED AT LMSC BLDG 524.
2. NO PAYLOAD CALIBRATION OR TESTING HAS EVER BEEN ACCOMPLISHED AFTER MATING WITH THE BOOSTER. NO PAYLOAD CALIBRATION OR TESTING HAS BEEN PLANNED FOR THIS MISSION AFTER MATING WITH THE BOOSTER.
3. THOROUGH PAYLOAD TESTING AND CALIBRATION TO INSURE HIGH RELIABILITY ARE PROGRAM OFFICE PREREQUISITES PRIOR TO DEPLOYMENT OF ANY OPERATIONAL SYSTEM.

SECRET
CFN: 0317 EARPOP WHIG R THAYER WAHOO [] MARGO R POTTS MADAM W HARRIS 7310/7311 MARGO 287-6 1. VAFB VAFB LMSC BLDG 524. 2. NO PAYLOAD NO PAYLOAD 3.
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SIX SIX SEVEN WORTH FOUR TWO EIGHT MADAM ONE NINE THREE WEDGE

SECRET 081447Z

PRIORITY WORTH INFO MADAM WEDGE WHIG CITE MARGO 384-6
EARPOP

REF: PHONECON KRANSKE [redacted] 1140 LOCAL 7 MARCH.

SUBJECT: 7311 CALIBRATION TEST RESULTS.

Handwritten: file

PER WORTH REQUEST WILL SEND MARGO [redacted] TO PARTICIPATE IN
MADAM REVIEW AND ANALYSIS OF VANDENBURG CALIBRATION TESTS. WILL
ARRIVE 1830 HRS PST AT SAN FRAN INT ON TWA FLT 61.

50X1

SECRET

CFN: CITE MARGO 384-6

EARPOP

REF: PHONECON KRANSKE [redacted] 1140 LOCAL 7 MARCH.

SUBJECT: 7311 CALIBRATION TEST RESULTS.

PER WORTH REQUEST WILL SEND MARGO [redacted] TO PARTICIPATE IN
MADAM REVIEW AND ANALYSIS OF VANDENBURG CALIBRATION TESTS. WILL
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1221845Z ZPO MADAM
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 SEVEN FIVE NINE WORTH FOUR FOUR SEVEN MADAM

SECRET /
 WORTH/INFO WHIG MADAM/CITE MARGO 461-6
 EARPOP/

WHIG FOR [redacted], MADAM FOR MAJ WILLIAMS.
 REF: MARGO 350-6 (022025Z MAR 66).

MARGO REPS VISIT TO MADAM FOR REVIEW AND ANALYSIS OF VANDENBURG CALIBRATION TESTS WAS EXTREMELY VALUABLE TO MARGO AND YEILDED THE FOLLOWING RESULTS PERTINENT TO MARGO PROCESSING PLANS:

1. THE DISCRIMINATOR OUTPUT LEVEL VARIATION VS INPUT POWER IS NOW FLAT WITHIN ACCEPTABLE LIMITS (MINUS 65 DBM TO MINUS 20 DBM).
2. LOW PASS FILTERING OF THE 17.5 KC VCO DURING PROCESSING WILL ELIMINATE THE PULSE FEED-THRU, PREVIOUSLY VISIBLE IN THE DISCRIMINATOR OUTPUT.
3. EXPONENTIAL DECAY OF THE BOX-CAR CIRCUIT IS AN UNDESIRABLE FEATURE, BUT UNDERSTANDING OF CIRCUIT OPERATION WILL PERMIT ACCURATE HANDLING DURING PROCESSING.
4. THE DISCRIMINATOR OUTPUT CIRCUIT CANNOT BE PROCESSED AS ORIGINALLY INTENDED DUE TO THE AC COUPLING OF THE DISCRIMINATOR OUTPUT TO THE BOX-CAR INPUT. IT WILL, THEREFORE, BE NECESSARY TO CALIBRATE AND PROCESS THE DISCRIMINATOR OUTPUT USING THE 158 MC CAL PULSE AS A REF POINT. UNFORTUNATELY, THE 158 MC CAL PULSES (AS VIEWED IN THE DISCRIMINATOR OUTPUT) DO NOT INDICATE THE SAME OUTPUT LEVEL (RF INDICATION) FOR EACH PULSE RECEIVED. BASED ON DISCUSSIONS AT MADAM, ~~IT IS MARGO'S UNDERSTANDING THAT THIS CONDITION WILL BE CORRECTED PRIOR TO LAUNCH AND THAT APPROPRIATE CALIBRATION INFORMATION WILL BE FURNISHED SO THAT THE DISCRIMINATOR OUTPUT CAN BE PROCESSED.~~

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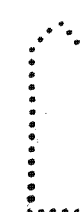
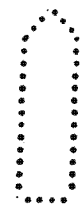
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file 7311

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NINE FIVE FOUR [] TWO NINE ONE WEDGE FOUR NINE FIVE MADAM
NINE NINE THREE WORTH
[] PASS MADAM

25X1

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T O P S E C R E T / B Y E M A N C H A N N E L S

[] INFO WHIG WEDGE MADAM WORTH WAHOO/CITE MARGO 670-6
REINDEER 24 (MODIFIED)
REF: (A) MARGO 544-6
(B) WORTH 0929

MODIFY PARA B OF REF (A) TO READ AS FOLLOWS:

1. REQUEST SHIPMENT TO MARGO OF ALL LIEGE AND PLICAT MASTER TAPES FROM DATE OF LAUNCH UNTIL ADVISED OTHERWISE BY MARGO. IT MUST BE FIRMLY ESTABLISHED BY MARGO FROM THE TAPE DATA THAT THE RECOGNITION CHANNEL HAS BEEN FUNCTIONING PROPERLY AND PRODUCES WIDEBAND RECORDINGS OF THE TARGET SIGNAL. DURING THIS PERIOD WEDGE REQUIRES DUB TAPES OF ALL MASTER TAPES SENT TO MARGO.
2. UPON DETERMINATION BY MARGO OF SATISFACTORY RECOGNIZER OPERATION THE ABOVE PROCEDURE WILL BE CHANGED TO MINIMIZE TAPE DUPLICATION EFFORTS, I.E., WHENEVER THERE IS WIDEBAND RECORDER READOUT FROM THE PAYLOAD EITHER BY COMMAND OR RECOGNITION MASTER TAPES WILL BE SHIPPED TO MARGO AND DUB TAPES WILL BE SHIPPED TO WEDGE. WHEN THERE IS PAYLOAD READOUT ON LIEGE ONLY, MASTER TAPES WILL BE SHIPPED TO WEDGE AND MARGO REQUIRES NO REPEAT NO TAPES.

50X1

NEW SUBJECT: IN ACCORDANCE YOUR VIEWS EXPRESSED REF (B) PARA 3
MODIFY MARGO 544-6 PARA 3 TO READ: MARGO WILL ACCEPT PAYLOAD R/I,
R/O AND GROUND STATION TIME AS PREVIOUSLY SUPPLIED AND WILL MAKE
OWN CORRELATION

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