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BYE-61782-92

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SUBJECT SEJ W/P DATA LINK SINSITIVITY 7105 SERIES	DISTRIBUTION INFO
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A. YOUR 121458Z DEC 68 (NOTAL)

1. EIGHTEEN MONTHS EXPERIENCE WITH WORKING THE 7105 SERIES SATELLITES HAS RESULTED IN SOME GENERAL OPINIONS RELATED TO SENSITIVITY AND FREQUENCY RANGE OF THE VARIOUS DATA LINKS. ANALYSIS AND LOCATION EFFORTS ARE COMPLICATED AND LENGTHENED IN PROPORTION TO THE NUMBER OF EMITTERS ON THE RECORDINGS. GENERALLY, IF THE ANALOG ANALYST IS ABLE TO POSITIVELY JUDGE THAT ONE OR MORE EMITTERS OF A CERTAIN TYPE ARE ACTIVE IN A TIME FRAME, THE DIGITAL RECORDING CAN BE SUCCESSFULLY PROCESSED FOR SIGNAL ANALYSIS AND LOCATION. AN IDEAL DATA LINK PROVIDES A LARGE ACQUISITION TAKE WITHOUT DEFYING THE EFFORTS OF THE ANALOG ANALYST TO UNTANGLE THE ACTIVE SIGNALS. WITH THE CURRENT HARDWARE AND SOFTWARE PACKAGE THERE IS NOT ENOUGH COMPUTER TIME FOR THE FIELD SITE TO FULLY EXPLOIT THE SYSTEM BY COMPLETELY WORKING EACH SIGNAL ON THE DIGITAL RECORDING - THEREFORE THE NEED FOR THE ANALOG ANALYST TIP-OFF ON THE SIGNALS OF INTEREST.

2. THE DATA LINKS IN THE 7105 SERIES CAN BE ROUGHLY ASSIGNED TO THREE GROUPS:

(A) THOSE WHICH COULD BE MUCH DENSER WITHOUT COMPLICATING THE PROCESSING EFFORT. GREATER SENSITIVITY OR A WIDER RF SPREAD MIGHT RESULT IN A LARGER TAKE WITHOUT CLUTTERING UP THE RECORDINGS WITH MARGINAL SIGNALS ON BRAVO DATA LINKS [REDACTED] CHARLIE DATA LINKS [REDACTED] AND DELTA DATA LINKS [REDACTED]

(B) BRAVO DATA LINKS [REDACTED] CHARLIE DATA LINK [REDACTED] AND DELTA DATA LINKS [REDACTED] AND [REDACTED] HAVE EXCELLENT DENSITY AND ARE THEREFORE CONSIDERED TO HAVE THE PROPER SENSITIVITIES AND RF SPREADS.

(C) CHARLIE DATA LINKS [REDACTED] AND DELTA DATA LINK [REDACTED] PROVIDE SO MUCH SIGNAL DENSITY THAT IT IS NEARLY IMPOSSIBLE TO IDENTIFY OR ISOLATE A SIGNAL UNLESS THE EMITTER HAS UNIQUE SCAN CHARACTERISTICS. REDUCTION OF SENSITIVITY AND/OR RF SPREAD SHOULD RESULT IN A GREATER NUMBER OF SIGNAL IDENTIFICATIONS AND LOCATIONS AND PROVIDE THE OPPORTUNITY TO EASILY IDENTIFY [REDACTED]

3. DUE TO ITS SPECIAL POWER SHORTAGE PROBLEM EVALUATION OF 7105 ALFA CANNOT BE MEANINGFUL. DATA IS RECEIVED WHEN [REDACTED] COMES OVER DURING SUNLIGHT HOURS, BUT NEVER IN A SUFFICIENT QUANTITY TO CHALLENGE THE ANALYSTS AND SELDOM IN SUFFICIENT QUANTITY TO DEVELOP TIGHT EMITTER LOCATIONS.

4. IN SUMMARY, IT IS BELIEVED THAT SENSITIVITY SETTING AND SELECTION OF THE RF SPREAD SHOULD BE RELATED TO THE SIGNAL POPULATION IN A GIVEN BAND RATHER THAN TO POWER CAPABILITY OF THE EMITTERS OF INTEREST. SINCE MOST OF THESE EMITTERS OPERATE WITH [REDACTED] IT IS NOT FELT THAT SENSITIVITY INCREASES WILL CAUSE A SIGNIFICANTLY GREATER RANGE OF JITTER.

5. TO PROVIDE A ROUGH FEEL FOR EFFECTS OF CHANGE IN SENSITIVITY AN EXPERIMENT WAS CONDUCTED ON 7105 BRAVO ORBIT 7834 TASKED FOR DATA LINK [REDACTED] BRAVO WAS KEYED IN STANDARD SENSITIVITY (MINUS [REDACTED]) AND DATA WAS COLLECTED FOR [REDACTED] SECONDS FROM 171839:03Z, RESULTING IN [REDACTED] COLLECTED. [REDACTED] WAS THEN RESET AND REKEYED IN THE HIGH TANGENTIAL SENSITIVITY MODE (MINUS [REDACTED]) AND DATA WAS COLLECTED FOR [REDACTED] FROM 171841:01Z, RESULTING IN [REDACTED] COLLECTED. THE HIGH SENSITIVITY DATA IS EXTREMELY CHALLENGING TO THE ANALOG ANALYSTS AND THE [REDACTED] INCREASE IN DENSITY MIGHT BE AN INDICATION OF THE DANGERS IN SETTING 7106 SERIES SENSITIVITIES TOO HIGH IN THE CORRESPONDING BANDS NOW CONSIDERED TOO LOW. A REPORT

CORRESPONDING BANDS NOW CONSIDERED TOO LOW. A REPORT ON THE YIELD FROM THIS EXPERIMENT WILL BE FORWARDED WHEN ANALOG AND DIGITAL ANALYSES ARE COMPLETED. REQUEST ADVISE IF SIMILAR EXPERIMENTS ON THE OTHER DATA LINKS IN [REDACTED] ARE DESIRED. TASKING WOULD HAVE TO BE WAIVED ON ALL GROUPS OTHER THAN [REDACTED] IN ORDER TO KEEP THE DATA LINK AND SLX ON DIFFERENT CHANNELS.

/RECOMMEND THAT THE SIGNAL ENVIRONMENT AT OTHER FIELD SITES ALSO BE CONSIDERED IN SETTING THE SENSITIVITIES FOR THE 7106 SERIES. LOCAL OPERATORS WITH POPPY EXPERIENCE AT [REDACTED] JUDGED [REDACTED] DATA LINKS [REDACTED] JKST ABOUT RIGHT FOR THOSE AREAS. IF FEASIBLE AT THIS LATE STAGE CONSIDERATION SHOULD BE GIVEN TO PROVIDING EACH DATA LINK WITH A HIGH AND STANDARD SENSITIVITY SETTINGS WITH FIELD SITE OPTIONS ON SELECTING THE SENSITIVITY MODE DURING INTERROGATION.