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~~T O P S E C R E T COMINT CHANNELS~~

VISIT OF DSD PARTY TO (29TH JULY TO 1ST AUGUST, 1968)

THE FOLLOWING SUGGESTIONS AS TO MEANS OF POSSIBLE IMPROVEMENT IN SHORT TERM IN RECEPTION AT ARE MADE BY WAY OF CONFIRMATION OF POINTS RAISED DURING DISCUSSIONS AT STATION WITH DSD PARTY. IT IS NOTED THAT MANY OF THE MEASURES SUGGESTED BELOW ARE ALREADY BEING IMPLEMENTED OR ARE UNDER CONSIDERATION BY THE STATION.

AERIAL FEEDS.

2. WE AGREE WITH SUGGESTION THAT FEEDS FROM INNER ENDS OF AERIALS BE RUN IN UR 57 CABLE, THE ATTENUATION OF THIS CABLE IS 5 DB PER 1000 FT AT 5 MC/S 6 DB PER 1000 FT AT 10 MC/S AND 8 DB PER 1000 FT AT 20 MC/S. SINCE THE DISTANCE FROM THE INNER ENDS OF AERIALS WOULD BE OF THE ORDER OF 500 FT THE ATTENUATION WOULD NOT BE EXCESSIVE. (THE USE OF UR57 WOULD BE OF A TEMPORARY NATURE HOWEVER SINCE ITS LIFE WOULD BE LIMITED IN DARWIN'S TEMPERATURE AND HUMIDITY CONDITIONS TO A PERIOD PERHAPS AS SHORT AS 2 YEARS).

3. CONSIDERATION SHOULD BE GIVEN TO PROTECTION OF CABLES FROM DIRECT SUNLIGHT, POSSIBLY BY MEANS OF OPEN CABLE TROUGHING WITH LID. CABLE WOULD OF COURSE REQUIRE TO BE LAID IN CONTINUOUS LENGTHS I.E. WITH MINIMUM NUMBER OF JOINS/ELECTRICAL CONNECTIONS BETWEEN AERIAL AND MULTICOUPLER.

4. THE AERIAL FEEDER REPLACEMENT PROGRAMME WOULD NATURALLY BE BASED ON REPLACING WORST FEEDERS FIRST, ATTENUATION/NOISE MEASUREMENT

ON EXISTING FEEDERS WOULD HELP IF PRACTICABLE. REPAIR OF EXISTING UR9 FEEDERS (ATTENUATION 3 DB PER 1000 FT AT 10 MC/S), WOULD BE WELL WORTHWHILE PARTICULARLY ON LONGER RUNS.

5. ALL NEW AERIAL FEEDS SHOULD BE BROUGHT IN TO THE 2RS SIGINT RECEIVER AREA AND THE DISTRIBUTED TO 1RS COMMUNICATIONS AREA.

AERIAL DISTRIBUTION.

6. IN ORDER TO GAIN A FAIR ASSESSMENT OF ITS WORTH IN REDUCING NOISE/INTERMODULATION THE PV132 MULTICOUPLER SHOULD BE LOCATED IN [redacted] WITH A SPLIT TO THE COMMUNICATIONS RECEIVER ROOM [redacted]. THE CHOSEN AERIAL FEED SHOULD BE CONNECTED DIRECTLY TO THE INPUT OF THE PV132 AND OUTPUTS FED TO [redacted] RECEIVERS WITHOUT ANY FUTHER SPLITTING.

7. SOME IMPROVEMENT TO THE PERFORMANCE OF THE EXISTING MULTICOUPLER ARRANGEMENT MAY BE GAINED IF THE EXISTING PYE MULTICOUPLERS IN THE 1RS COMMUNICATIONS RECEIVER ROOM WERE REMOVED TO THE [redacted] AND INSTALLED AS THE FIRST AMPLIFIER OF CASCADED PYE/STC MULTICOUPLER PAIRS, AGAIN WITH A SPLIT OFF THE FIRST PYE MULTICOUPLER TO THE COMMUNICATIONS RECEIVER . SINCE THE PYE MULTICOUPLER HAS 6 OUTPUTS, THOSE OUTPUTS NOT FEEDING STC MULTICOUPLERS CAN BE BROUGHT UP TO THE AERIAL PATCH PANEL FOR USE ON PARTICULARLY WEAK SIGNALS WHEN THE HIGH NOISE FIGURE OF THE CASCADING STC MULTICOUPLER COULD BE A PROBLEM.

INTERFERENCE REDUCTION.

8. A CONSIDERABLE REDUCTION IN LEVEL OF INTERFERENCE FROM COMMUNICATIONS/DECRYPT SHOULD BE OBTAINED IF NEW AERIAL COAXIAL CABLES ARE BROUGHT IN DIRECTLY TO OVER A ROUTE AVOIDING 3RS BY AS GREAT A DISTANCE AS POSSIBLE. LITTLE CAN BE DONE TO REDUCE THE LEVEL OF RFI GENERATED BY DECRYPT EQUIPMENTS BUT BENEFIT WILL BE GAINED BOTH IN RFI REDUCTION AND IN RADIATION SECURITY BE USE OF LOW LEVEL SIGNALLING IN THE COMCENTRE AND OFF-LINE TAPE PREPARATION/PAGE COPY AREA.

YOUR SUGGESTED PROGRAM OF REWIRING THE COMCENTRE IN GALVANISED CONDUIT SHOULD FURTHER REDUCE THE INTERFERENCE GENERATED BY THE COMCENTRE.

RECEIVER MAINTENANCE/TEST EQUIPMENT.

9. A CLEAR NEED IS NOTED BOTH FOR A CONSIDERABLE INCREASE IN INDOCTRINATED RECEIVER MAINTENANCE PERSONNEL AND FOR EARLY PROVISION OF THE TEST EQUIPMENT FOR WHICH NECESSARY ALLOCATIONS HAVE BEEN MADE.

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