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FILE MEMORANDUM: FBW-6.1

6.1 Problem: Develop computer simulation program for detection of signals in noise. Consider two or three signal waveform such as: (1) on-off carrier, (2) frequency-modulation, (3) phase-modulation. Then develop a simplified model of impulse noise based upon the available noise tape. Assume a probability distribution of noise pulses, then determine the conditional probability the noise pulses causing errors in the three systems. This would involve developing a computer program with sub-routines for the following:

(1) Noise representation.

(2) Addition of signal and noise in different phases.

(3) Simulation of detection process in the different modulation systems.

(4) Comparison of transmitter signal with detected signal.

(5) Tabulation of error probabilities against signal-to-noise ratio.

The completion of this problem would make available a general computer program for studying modulation systems, which could be extended to other cases later by the development of alternative sub-routines.

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